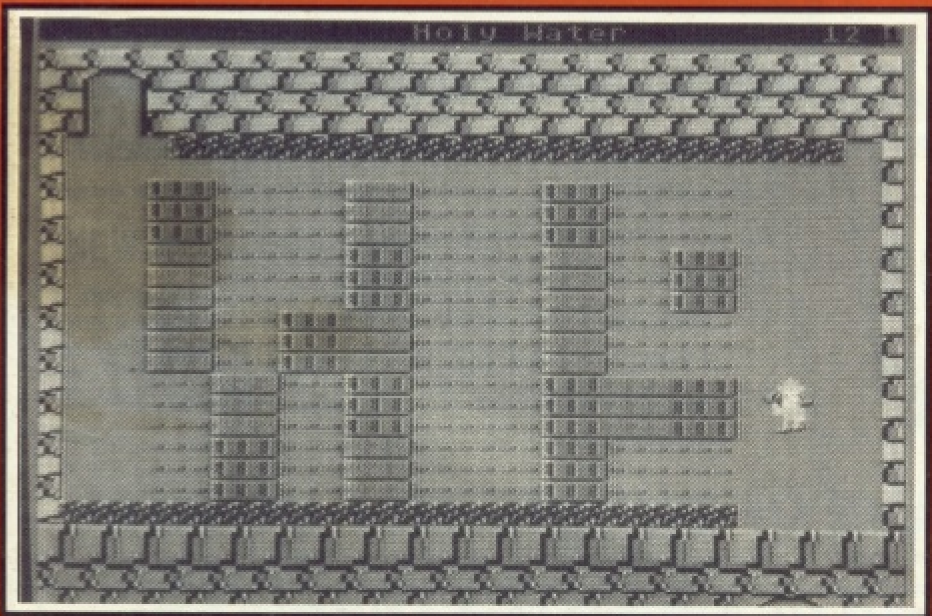
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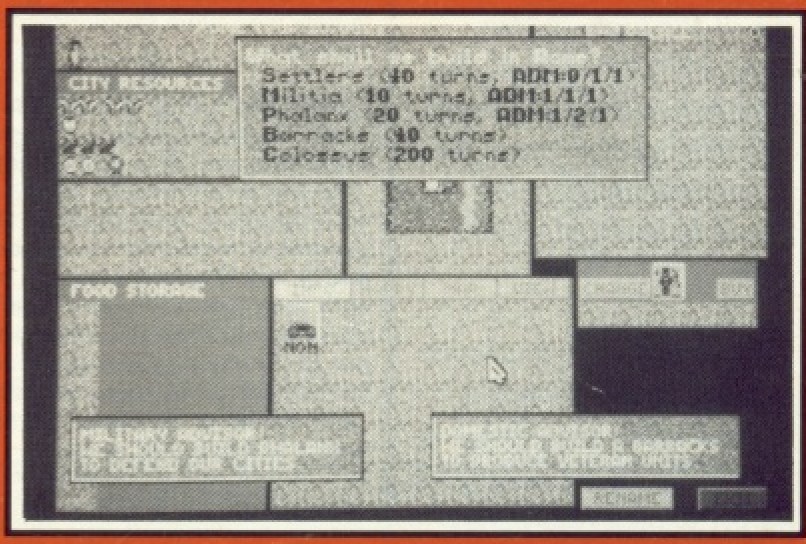
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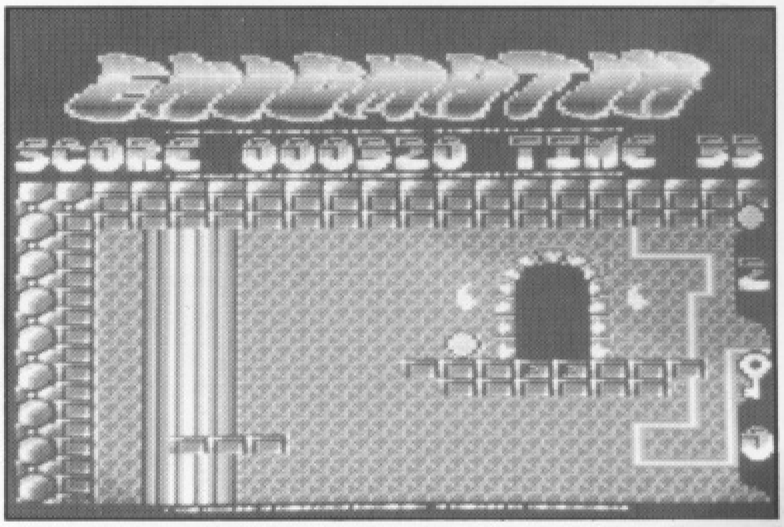
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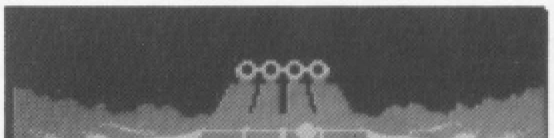
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Yes, believe it or not, we have tracked down a brand new ROM CARTRIDGE for the XL/XE from Lindasoft in Italy who have produced this in conjunction with Atari Italy.

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'The magazine for the Dedicated Atari User'

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Issue 62 - June/July 1993



Dreaming of my Atari!

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SUBMISSIONS

PAGE 6 welcomes and encourages its readers to submit, articles, programs and reviews for publication. Programs must be submitted on disk or cassette, articles should wherever possible be submitted as text files on disk. We seek to encourage your participation and do not have strict rules for submissions. If something interests you, write a program or article and submit it!

The next issue of NEW ATARI USER will be on sale 29th July
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PAGE 6 PUBLISHING's

NEW

ATARI

USER

Issue 62
June/July 1993

'The Magazine for the Dedicated Atari User'

ISSN No. 0958-7705

THE CREDITS

All of the usual stuff is on page 3 but here are the people who made this issue possible.

Les Ellingham ploughs on, racking his brains over how to put each issue together. You would think that after all these years it would be easy but far from it, especially when more and more other things need to be done as well

Sandy has done her usual bit keeping things going and is currently having great fun packing up books for despatch (what's that got to do with computers?)

Paulette is still here, remaining cheerful and doing everything that needs to be done but she could do with a bit more work so how about making her really work for her money with a lot more orders?

The Regular Contributors, who provide the backbone of the magazine and can generally be relied upon to come up with good articles and reviews, are ....

John S Davison	**John Davison jr**
John Sweeney	**Paul Rixon**
Damon Howarth	**Ian Finlayson**
Allan J. Palmer	**The Tipster**

All other contributors for this issue are individually credited alongside their articles or programs. Thanks to everybody for sharing their enthusiasm with other Atari users.

Inspiration comes this time from a mere two CD's which have had a good hammering as I type. Luckily they both bear repeated listening. First is Nanci Griffith with Other Voices, Other Rooms a superb collection of early songs which inspired her to perform. Loads of great songs that I used to listen to 20 years ago brought freshly up to date proving that when a song is good it is good no matter how ancient you might think it is. This one is so good that it is almost permanently on the repeat button. The other one is by Daniel Lanois called The Beauty of Wynona and most strange it is too. His first album was excellent and a good review in Q forced me to go and get this only to be greatly disappointed on first hearing. But, it is a sleeper and after a few plays the depth begins to show and it becomes compelling listening. That's it really, with a few oldies interspersed here and there. The backlist keeps growing though!

The next issue of NEW ATARI USER could feature YOUR article or program, so SEND IT IN NOW!

PAGE 6 shows just what you can do with your Atari. NEW ATARI USER has always been created entirely with Atari equipment, initially on the XL but more lately with a Mega ST and other stuff, who needs PC's or Macs! With the exception of the final output on a Linotron and the use of an in-house repro camera for the photos and listings everything is done on the ST. Hardware includes a Mega ST2 (upgraded to 4Mb), SM125 Monitor, Supra 30Mb Hard Disk, an Atari Laser Printer, Citizen 124D printer, Philips CM8833 monitor, 130XE, XF551 disk drive, 810 disk drive, 850 interface, NEC 8023 printer. Principal software used is Protext and Fleet Street Publisher 3.0. Other software includes Kermit, TariTalk, Turbo Basic and various custom written programs on the XL/XE. Articles and programs submitted on XL/XE disks are subjected to various custom written programs before being transferred across to the ST via TARITALK. All major editing is done with Protext and pages are laid out with Fleet Street Publisher. A disk with the finished pages as Postscript files is sent to a typesetting bureau to be output on a Linotron and, hey presto, finished pages are sent back exactly as you see them. It really does work! All that is left is to drop in the listings and photos.

Well, it's not quite as easy as that but you get the idea!

Editorial

PRICE RISE

It is with regret that we have to announce an increase in the subscription cost of New Atari User with immediate effect. This is a measure that should have been taken some time ago but, with the recession as it is (do you really believe that it is over?), we have tried to delay the action for as long as possible.

It is some considerable time since we last increased prices and in that time general costs have increased whilst advertising revenues and casual sales have reduced, leaving us in a position whereby we have to increase the subscription cost in order to continue to bring you the only magazine to support the Atari XL/XE. It is not something we wish to do but if we do not act now you may lose the only national support for your machine.

The U.K. subscription rates are increased to £15.00 for an annual subscription, rates for Europe are increased to £17.00 and elsewhere by Air to £23.00. *The good news is that, for the time being, the disk subscription rate will remain unchanged.* The reason for this is that we have been advised that there are likely to be major increases in the cost of disks this summer due to EC directives coming into force which aim to restrict the sales of Japanese disks in the EEC. Rather than have to announce two price increases we are waiting until we know what our costs are going to be.

For a couple of issues at most, therefore, the disk subscription represents excellent value and there has never been a better time to change over. If you have a disk drive, you really ought to think about a disk subscription. Act now and you'll get it at a lower rate than if you delay.

I know price increases are always unwelcome but with a relatively small circulation specialist magazine it is impossible to absorb costs forever. Many ST magazines cost £3.95 per issue, specialist business magazines can cost up to £10 per issue so £2.50 is not really such a lot to pay for your only ongoing contact with the Atari world is it? Please continue to support us so we can support you.

PIRACY OR NOT?

Allan Palmer's Mailbag Extra and a question on copyright in the letters column has finally spurred me into commenting on a question that could provoke very mixed reactions. As you all will know PAGE 6 has always been against the pirating of software, even losing lucrative advertising in the early days because of our stance, but now I am not so sure what position we should take.

Basically, all published software is the copyright of whoever published it and it is illegal (not to mention immoral) to copy it other than for personal backup. In respect of software which is still being commercially sold either by retailers or software publishers, the position is clear - you should under no circumstances copy and distribute this software since it deprives someone of income which is rightfully (and legally) theirs. But what about software that is no longer being manufactured or sold? The same situation applies, it is still under copyright, but many individuals and user groups in the USA now argue that such material should be considered public domain. The argument goes along the lines of 'the publishers are not making any money from it any more (since they have dropped it) and they will not support the software if you do buy it, so why not just copy it?'.

The arguments are a lot more complex but I have to admit that I can see the point. Is there any harm in distributing software that is long out of production, cannot be bought from any retail source and was, quite likely, produced by a company that went out of business years ago? If we were in a situation where loads of new software were being released for our machine we wouldn't even be thinking about this, we wouldn't need to, but with so little new software available much of which is not to everyone's taste, where do you turn if you want to keep your Atari Classic alive?

I am sure that everyone has their own views, so how about letting us know what you think. I am sure that Allan Palmer's Mailbag could be made to overflow, if you drop us a line with your point of view. Incidentally, I must take this opportunity to say how well Mailbag is progressing since Allan took over. Congratulations to all who write in and to Allan for the mammoth task of putting it all together.

On the question of copyright of listings in magazines, the situation is that the publisher holds the copyright but ANALOG, ANTIC and COMPUTE! have agreed that listings published by them can now be considered public domain. For Page 6, New Atari User and the old Atari User (which we bought from the original publisher) we have no objection to others using the listings but we would appreciate an acknowledgement of the source since we can still benefit from any publicity this might create.

Les Ellingham

Mailbag

Well, there I was thinking what am I going to do without any letters for this issue's column when a packet arrived from Stafford with a bundle of correspondence. I'm pleased by the variety and especially by the responses to previous pleas for assistance. Thanks to many of you (including Bill Diggins, S W Berry, Stan Shearing, Richard Carter, Stuart Murray and Dave Ewans) for the votes of support and encouragement for this column. Please remember MAILBAG is only as good as YOU make it so keep those letters coming in!

Allan J Palmer sits in the hot seat at the sorting office _awaiting your letters on all things Atari - get writing!_

Write to MAILBAG at Page 6 Publishing, P.O. Box 54, Stafford, ST16 1DR

HARDWARE HELP

S. W. Berry from Ashford, Kent writes *"In issue 60 H. Spencer of Maidstone, Kent wrote saying he had problems with his 810 drive; as you see from my address I live in Ashford, Kent - only 18 miles from Maidstone. If you had printed his address or phone number I could have contacted him direct and helped him solve this problem. Is there a reason for not printing addresses?"*

Normal practice is only to print full addresses if correspondents request it - some people may prefer not to have their details published. So, if you're happy to have your full address printed please indicate this specifically.

Mr. Berry continues:

"I have used Atari computers for some six years and have repaired and upgraded them as required. I am an electronics freak and love to solve hardware faults when time allows. I do this for fun and do not ask for payment other than postage or the cost of components. So if any Atari user has a problem please feel free to contact me at 17 Old Pond Road, Ashford, Kent TN23 2QX and I will see what I can do."

Thanks for the offer Mr. B, I hope you will be able to assist some of your fellow Atari Classic owners. Also on the subject of hardware fault assistance, Dave Ewans of the Tyne & Wear Atari User Group (TWAUG) has mentioned in correspondence to me that they have three or four contacts who can help with hardware problems. Why not drop TWAUG a line at P.O. Box 8, Wallsend, Tyne & Wear NE28 6DQ?

NETWORKING THE ATARI CLASSIC

The request from Arthur Morris in last issue's MAILBAG for a way to link two machines to the same disk drive, monitor, etc. prompted a number of replies some of which involve hardware modifications. I have to remind everyone that Page 6 and New Atari User cannot take responsibility for hardware modifications and repairs made by its readers. If in doubt - don't! First out of the sack was Richard Gore from Doncaster:

"Yes, it is perfectly possible to network 8-bit Ataris in at least two ways that I know of. The most comprehensive and professional way of doing this is to buy a 'Multiplexer' from Computer Software Services (CSS), PO Box 17660, Rochester, New York 14617, USA (phone: 716-429-5369), however they do cost $199.95 plus shipping. You basically link your computers together via the supplied interface cables which plug into the cartridge ports and work with any 8-bit computer. One interface is the 'master' which you plug into the machine that you want to be your master (and have your disk/hard drives and printer attached to). The other machines are then 'slaves' and all their I/O is done via the master. It was originally designed for use in a BBS situation where the SysOp may not want to tie his hard drive up by using it solely for the BBS. The 'Multiplexer' would suit Mr. Morris' needs but he wouldn't be able to attach more than one computer to his TV with each one tuned into a different channel, even with an aerial splitter, as the RF output is the same (very nearly) for all UK 8-bit machines so the pictures would interfere with each other. This can of course be overcome by simply having only one computer plugged into the TV at once!"

Stuart Murray of FUTURA also suggested the 'Multiplexer' and supplied CSS's address, etc. Richard continues:

"The cheaper method involves fixing a second I/O socket into one of your computers and then connecting it to a second computer via a standard I/O connector cable with pin 10 disconnected. this will allow both your computers to use the same disk drive, printer, etc. but you must be careful not to try to use the drives, etc. from both computers at the same time. it is quite a simple task to perform but not one that I would recommend someone without soldering experience to tackle.

It is also possible to transfer data from one computer to the other using this method, but by reversing pins 3 and 5 on the I/O cable and using suitable comms software on each machine. There was a brief article on this on Mega-Magazine 3 (or possibly 2) but it had a slight bug and was very brief. I haven't tried this yet so I can't say for certain that it will work but I have been told that it is theoretically possible."

B Rogers of Southampton provided this suggestion:

"All that is needed is the following:

1. *telecomms software (Kermit, DTerm, etc.)*
2. *a RS232 interface for EACH machine*
3. *a Null Modem cable*

Setting up is somewhat laborious without two monitors, as it is easy to make mistakes when you can't see what you're typing. I suggest the use of batch files from

SpartaDOS, or similar, to make life a LOT easier. All that is then necessary is to set one machine to upload, the other to download a file and bingo! Job done. In theory it should be possible for both computers to use the same disk drive(s), but be aware that trying to write to the same drive from two machines at the SAME time WILL cause problems. I therefore suggest that if a 130XE is part of this setup, use the RAMDisk option to negate this possibility.

Note that the solution is hinted at by the letter from Den Baverstock ('From XE to ST') that was published in issue 61's MAILBAG. Obviously, the pin connections he gives for the ST are of no use but the 850 ones are. Something else to remember should Mr. Morris build his own cable, is that the wires for TX and RX data should be swapped at ONE end of the Null Modem cable. He'll probably have to build a cable anyway as Atari, in their infinite wisdom(?), saw fit to use a non-RS232 standard plug and socket on the 850 interface module. That is a 9-way 'D' type instead of the usual 25-way piece."

Thank you for your input, Mr. Gore and Mr. Rogers. (Incidentally, I believe Richard is the author of 'PRINT-LAB' which first appeared as a Bonus on a NAU issue disk, and its enhanced version now available from Micro-Discount.)

On this subject also, Mark Watson of North Humberside notes that back in issue 53 where Kit Lethby describes how he linked his XE and Atari Portfolio, Kit also mentions building an interface to connect two XE's to a common set of peripherals and wondered if anyone would be interested in reading an article on this. Well, Kit how about contributing to this discussion with your experiences?

CONVERTING TRANSDISK FILES

Stuart Murray from Aberdeen sent the following in response to C Andrews' request for a way of converting TransDisk files to standard .OBJ files. (I suggested that the utility 'File2DOS' might be a solution):

"The 'File2DOS' Converter on FUTURA issue 3 will not convert TransDisk .OBJ files to standard DOS 2.X files. I believe TransDisk .OBJ files will not autoboot alone - they need one of the standard TransDisk menus. This means that 'File2DOS' will not convert them because Option 5 (boot disk) will only convert single-stage autoboot disks (e.g. from Howfen, Ian K, Alpha, etc.). The other options allow conversion from MultiBoot, Rob C, Stevesoft and Mikran. I don't know of any TD4 to DOS2 programs on the market today. I imagine it would be possible to write such a program because of the many converter programs already available, however the simple solution is to use Howfen tape - Disk (Futura 4). This allows you to place the cassette program onto a boot disk which can then either be placed on a Howfen Menu or converted to DOS 2.X with 'File2DOS'."

Thanks for the information, Stuart. One thought that comes to my mind is could someone write a survey of the various P.D. menu systems like Howfen, MultiBoot, etc. - who originated them, what their strengths and weaknesses are?

MANAGER 3003

Stuart also reports that an enhanced version of this program (sought by Freddy van den Heijning) is now available on NoSAUG PD disk U02 - write to Stuart at 71 Walker Road, Torry, Aberdeen AB1 3DL for more details of NoSAUG's PD selection.

MONITORS

B Rogers also responded to F Fry's issue 61 enquiry about monitors:

"The terms EGA, CGA and VGA are all used in conjunction with monitors for use on IBM PCs and compatibles, so he shouldn't worry about them too much. Any monitor he uses for an Atari 8-bit must have a composite video input. Most modern televisions qualify, if they have a "Scart" socket on them. Personally I use a Philips CM8833 monitor which has the advantage that, when bought new, it has a twelve month "on-site" guarantee, i.e. they come to you should it need repairing!"

DALEKS

John Stecyk from Australia hoped last issue for a version of 'Dalek Attack' for the Atari Classic. Stuart Murray (again) notes that:

"'The Lone Raider' by Atari (cassette) features Dalek clones on the first level. They come at you from both sides. Although not true Daleks they are rejects from Davros' experiments (hee hee)!"

Now for some request for help ...

SERIAL PRINTER

S W Berry from Ashford who volunteered hardware help (see above) needs some assistance with a recently acquired *"... second printer made by Newbury Data UK type 8830 - it works fine on self test, plugs in to a Spectrum serial port and works great, it works with the office PC in serial mode, it won't work with any of my Ataris and I have 4 standard 800XLs, 2 800XLs with 256k ram and ComputerHouse's OS card, and a 130XE - I have all the interface data, the baud rates, the pin connections and the expertise to make any cabling or interfacing and it still won't work! I have been told that the serial device handler that is part of the OS requires a device ID and that AtariWriter+ sets up this handler on boot up and cannot be altered. Is this true? Can I modify AtariWriter+ 130XE version to access this printer and while I am at it what about the extra ram I have, can that be accessed? I hope some one can solve this one for me."*

OK experts, who can help on this?

ATARIWRITER AND PROOFREADER

Steve Shearing from Southall in Middlesex has a couple of questions, first he has *"...AtariWriter on Turbo Tape, and now have a disk drive; would it be possible to use ProofReader in conjunction with AtariWriter on tape or does it only work with the cartridge version?"*

I must admit that I didn't think AtariWriter was available on tape - I know a Turbo-Load tape Word Processor is available from Micro-Discount - can anyone explain?

WORD FINDING

Steve also admits to being a compulsive crossword puzzler and has seen the calculator-style word finders that enable part of a word to be input and which then returns a list of the alternatives on its display. Steve asks *"...if anything like this has ever been produced for, or could be adapted for the Atari?"*

I'm unaware of anything like this on the Atari Classic - I suspect that it would only be practical with a very large RAMdisk. Any comments, anyone?

FAULTY CHIP

On the international front this issue, we have a letter from Peter Panayiotopoulos in Athens, Greece. Peter offers congratulations for the new-style MAILBAG column (he liked the dedication in issue 60) and reports that he's been having problems with his 800XL. To sum it all up, the last time it went for repair, it was returned with a faulty chip in its holder - the chip has the following text on it: "AMI 8442MBZ

Mailbag

C04889-01 (c) C04085 Philippines". Peter would like to know if it is easy to find this chip and if so, is it a simple task for him to make the change himself? Peter can be contacted at 29 Kosti Palama St., Egales, Athens GR-122 43, Greece.

HOME FILING MANAGER

Nigel Ludlow from Bath has some questions about 'Home Filing Manager' (HFM). (I hope my article in issue 61 in reply to your previous questions were of help, Nigel).

"First, is it possible to copy HFM data disks - to back them up? I have tried using a couple of sector copiers without success."

Oh dear, Nigel, you do seem to be having problems. I've just booted up Page 6 disk DS#5 and used the Sector Copy Utility on it to copy a HFM data disk, and then successfully used the copied data disk with HFM - no problem! Is your problem linked with the corruptions you wrote about before? Is your drive working 100%? Does the copier work, and it's only when you try to load into HFM that you have problems, or does the copier report errors? What else can you tell us about the problem?

Nigel continues:

"Alternatively, is there a better program to keep various types of customer/mailing data on? I like HFM because of its search facilities. I have a Customer Number on the top line of the first card, with search codes, if necessary, and the letter 'A' following the Customer Number. The lines below then contain their address. The next card has the same Customer Number followed by the letter 'B', and this contains any remarks such as 'phone number, date of order, etc. When I want to print address labels, I just call up all the 'A' cards and list to printer. One drawback of this is that I have to manually wind back the printer a bit after each label has printed as the HFM card is larger than the address labels I use. I have AtariWriter+, PaperClip, and MiniOffice II - would any of these be better than HFM? I have tried reading the manuals with regard to mail merging, etc. but don't understand them - am I stupid?"

No Nigel, you're not stupid - the trouble is these programs are so flexible that the manuals only touch the surface of ways in which they may be used. It's up to users to contribute their ideas on how to use the programs for different solutions. I do like your idea of using 'A' and 'B' cards within HFM - that's quite neat and I might find a way of using something similar myself - thanks for the idea! PaperClip, still my favourite word processor for the Atari Classic (although I would have loved to acquire version 2.1 with SpellChecker!) is fine if you just want to maintain a list of addresses to use for mail merging as is AtariWriter+. However, if you want to maintain other data as well as the addresses then a database is a better option. MiniOffice II would be a possibility - store your data using the Database module, then when you want labels, select the address records from the database file and print them using the Label Printer module. Anyone like to write a tutorial on using MiniOffice II?

Oh yes, regarding having to roll back the labels when printing from HFM - have you got the utility by Derryck Croker in BaPAUG's '8:16' issue 13 yet? It should give you the ability to control how many lines you want per label.

PRINT SHOP PROBLEM

Finally Nigel reports that he is *"...unable to print anything using 'Print Shop' - although I can SOMETIMES if I load the 'P.S. Companion' first. The P.S. disk appears to have 'lost' the code to drive a printer - even going to the 'SetUp' facility. Is it possible to reprogram the file that handles this?"*

I wonder if this is yet another symptom of the apparent disk problems which have cused you difficulties with HFM? I note that in the P.S. Companion manual it states that "The setup procedure may not work successfully if your disk drive's speed is out of adjustment". Is there anyone with an in-depth knowledge of 'Print Shop' who can shed any further light on the problem?

SOUND SAMPLING

Mark Watson of Bridlington, North Humberside would like some help with sound sampling:

"I have a 'Replay' cartridge from Gralin International. I would like to know how to play 2 tracks at once, or how to merge tracks, etc. I think it is possible as DigiDrum can play two drum sounds at once. Please can someone out there write an article about sound sampling on the Atari Classic. I think a lot of people would be interested."

That sounds like a good idea to me - any volunteers?

FLIPPING DISKS

D Bennett from Coventry writes:

"I like the Page 6 Magazine disks - not only do they save a lot of typing in, but there are usually some extra games included as bonuses. I do, however, find the scrolling messages take a long time to read, and frustrating if I want to see just part again. Is there a way of showing the text normally?"

Normally you could use a Sector display utility to search for the start of a text message on the disk and then display or print it, but the scrolling message on the title screen on the Issue disks is compacted and included directly in the program by a special utility so cannot be read in this way. Occasionally, either by accident or design, the original text message is left on the disk usually with the filename INTRO.TXT and you can copy this to screen or printer with DOS or load it into a word processor.

Mr. Bennett continues:

"I found one of the disks was double-sided, and I could not use all the programs. Too late now, but could you avoid this in future issues? I have been using a notch cutter to let me use both sides of standard double density disks in an unmodified 1050 drive. So far only one disk has failed to format both sides, but since I use standard 1050 should this be called Double Sided and Double Density?"

That's got me confused, Mr. B. Which issue disk are you referring to? The issue disks have had a bonus on side B for the last couple of years at least. How did this stop you using that particular disk? And then you talk about using both sides of your own disks by adding an extra notch. A true double sided disk is one that can be written by a XF551 drive (with the appropriate DOS) so that both sides can be accessed without flipping the disk over - both physical sides are one logical disk. The usual practice of notching the 'other' side of a disk on the Atari Classic results in essentially each side of the disk being treated as a separate entity.

TRANSDISK AND DOS

Daniel Baverstock was pleased to see Raphael Espino's article on solving problems with TransDisk 4 in issue 61. He has a lot of TD files from a 800XL/1050 system that he would like to run on his 130XE with US Doubler-enhanced 1050. Daniel has *"...tried Raphael's program in NAU issue 61 and successfully changed DOS2.0 to DOS 2.0TD. I then started to copy files off my old disks and onto the new XE/XT menu disks. Again, to my great disappointment, the same old 'Error 139' came up. I can't access these XE/XT menu disks, nor can I write to them. Is it the 1050 drive fitted with US Doubler that's formatting the TD XE/XT disks in the wrong way?"*

It sounds as though you may be experiencing the problems noted by Raphael in his article where DOS2.5 has corrupted the game file. Come in Raphael, can you shed any light on the matter, please?

ORDERING FROM OVERSEAS

Mr. Bennett adds a few thoughts about buying software from abroad:
"I have found it difficult and expensive to send money abroad in foreign currency without the use of a credit card. What is the cheapest and best way?"
Good question - what advice can our readers offer? Part of the trouble is the changes in services/charges offered by banks, etc. A couple of years ago, Girobank charged you £5 to send a foreign currency cheque abroad - that wasn't too bad; last year, however, the fee was £15! Has anyone had any experience with American Express or similar organisations? Incidentally, in recent correspondence with American contacts, IRCs (International Reply Coupons) don't appear to be quite so international, apparently not being recognised at all post offices.

And also related to this subject, Mr. Bennett reports that he has *"...had a problem with a specific company. Tommysoft of Germany have a shareware program called Soundmachine and I have been unable to get a reply from them over many months. An insured letter enclosing payment in Deutchmarks was returned marked 'Not Collected', and I have now written to John Davison asking for his advice and if the firm still exists."*

COPYRIGHT

Again from Mr. Bennett, an interesting question on the subject of copyright:
"What happens about the copyright for listings and information published in ceased magazines like the original 'Atari User'?"
Another good question, we could also extend it to ceased software publishers. Does anyone know what the legal situation is in such instances?

ARTICLES WANTED

S W Berry also notes that:
"Back in issue 32 was the first article of a new series by Mark Fowlis called 'Expanding Your Atari' - it was then dropped as it was considered to be too technical. Yes it might be technical to some but to others it would be very useful. Can we ask the MAN at the top to reconsider or release the information to those willing to buy it. Please see what you can do."
The man at the top says we have been asked several times for this series to be concluded or reinstated, so there is an obvious interest. The reason it was dropped was not that it was too technical but because we were advised that the articles published contained a number of errors of the sort that would only be apparent to someone with in-depth technical knowledge. Since it was not possible for the editor to verify the accuracy of the remaining articles, it was considered safer to terminate the series.
Similarly, Bill Diggins from Leeds *"...would appreciate a little bit more information in the operation of programs."* Roy Goldman's 'Daisy Dot 3' is one of Bill's favourite programs and he's pleased by the articles that the Tyne & Wear User Group are running in their Newsletters. They have available David Richardson's excellent user Guide for DD3.
So, why not boot those word processors up and put together some tutorials on using your favourite pieces of software to best effect? Bill also expresses his thanks to Tommy from Cleveland who provided Bill with assistance following a request in an earlier issue of the magazine.

Peter Kerrison of Camberley, Surrey is also eager to hear, like John Young in issue 61, about how to use 'ACE C' from the PD Library. No info has arrived yet ... Just a thought - and it might be totally useless - what if you load the 400/800 Translator first before loading 'ACE C' - does this make any difference?

HALLS OF FAME

Richard Gore adds a few thoughts to last issue's suggestion for including 'Hall of Fame' score files:
"Saving Halls of Fame onto game disks is all very well but I, and I suppose other people too, like to write protect their master disks to protect their valuable software form being corrupted. I have had one of my master disks corrupted this way (fortunately I got it replaced - thanks Dean!) and I certainly don't want it to happen again especially since it is not possible to replace many of the games I have. Backups, what backups? I know everybody says you should make backups, but its just not possible with many of the protected disks and an unmodified drive."
A valid point there, Richard. In the last column, I was really thinking of games appearing in magazines where you should be able to recreate the program if necessary. For 'commercial' games, the master disk could remain write-protected and at the 'game over' point a prompt to insert a separate high scores disk could take place, so the Hall of Fame remains on a separate disk. I'm sure I remember at least one game doing this - after all it's not that much different from a 'save game' feature.

NEW SOFTWARE

Richard also commented on the 8-bit software situation:
"There is some new software available from the dedicated suppliers still supporting the 8-bit - check out the price lists from Derek Fern, Dean Garraghty, Gralin International, Tiger Developments, not forgetting Page 6 and remember Miles Better Software still has a massive range of old software at great prices. But don't expect the companies like Zeppelin Games to release any new products - their major problem lies in the fact distributors won't touch 8-bit software any more so it's not worth their while writing any new stuff. There are many games out there written and gathering dust waiting to be released. A few years ago there was a company promising us games like 'Shadow of the Beast' and 'Paperboy' - they vanished. Zeppelin announced 'Go-Kart Simulator' - it never appeared. A new company even sent a demo of their new game 'POD 1' to Page 6, the company was called Fantasy - Page 6's headline was 'NOT A FANTASY!' Oh yes it was, where is that game now and the rest of their titles? What really did happen to those people at Zeppelin "we love the 8-bit, it's the best 8-bit around, we'll support it for a long time to come" as well as those two excellent programmers Brian Jobling and Ian Copeland? Come on guys you might not be able to buy a new Porsche with the money you'll make but surely you could treat us a few more times to some more new software even if it means going into partnership with somebody like Page 6 or Micro-Discount to get your games distributed and programming them in your spare time!"
And on the new games theme, Daniel Baverstock reports that he's very happy with his recent purchase of 'Operation Blood', the 'Mission wolf' clone from Poland reviewed in issue 60. He's looking forward to more like this in the future especially the 'Lemmings' clone, 'Brundles'!

Thanks again for your contributions which have made another Mega-Mailbag. There is plenty for you to respond to in this collumn but don't leave your letters to the last minute before the copy date - I have to have them in plenty of time to put the column together to get it to Stafford by that same copy date! If you can afford to send your letter as a text file on disk, as well as a printed copy it will save me time in compiling the column - but typewritten or legible handwritten correspondence is still welcome.

"Take us out of orbit, Mr. Sulu!"
"Heading, sir?"
"Out there. Thataway!"
"A most logical choice, Captain."

XL/XE UTILITY

MULTILOAD

Karl Fitzhugh presents a neat method of selecting programs from your disks

Multiload XE is a useful utility which provides a menu allowing you to Autoboot your Basic programs from disk. This is far more convenient than having to Boot DOS, then swap disks, then load your chosen program by hand. It also gives a nice polished look to your library of Basic programs.

I wrote the program some years ago because I was unhappy with the available programs, which basically listed the disk directory to screen and allowed you to select a program to load. None of these programs looked particularly attractive, and they obviously only allowed you the standard filenames to describe your programs. Multiload XE features several improvements: an attractive front screen, descriptive program titles, one-key selection, muted I/O beep, and a loading message with a 'Seconds To Go' countdown. There are three program listings and they function as follows.

LISTING 1 AUTOBOOT FILE MAKER

This program writes a machine language 'AUTORUN.SYS' file to your disk. When the disk is booted, this file instructs your Atari to load and run Listing 2. When you have typed in Listing 1, save it under a suitable title (such as 'D:MAKER') before running it - this will enable you to create more Autoboot disks in future. When you run the program, follow the on-screen prompts - make sure you have a DOS 2.5 formatted disk to hand, containing the DOS file 'DOS.SYS' (Use the DOS 2.5 commands 'I' and 'H' to prepare such a disk, and then delete the file 'DUP.SYS' which is not needed).

```
CS 1 REM ################################
KK 2 REM #          MULTILOAD           #
NU 3 REM #         (Listing 1)          #
ST 4 REM #      by Karl Fitzhugh        #
SG 5 REM # ---------------------------- #
AU 6 REM #  NEW ATARI USER - JUN 1993   #
CY 7 REM ################################
TD 10 GRAPHICS 0:? "Insert a formatted DO
   S 2.5 disk","containing 'DUP.SYS' into
    drive A":? :? "Press a key..."
OO 20 IF PEEK(764)=255 THEN 20
CQ 30 ? :? "Writing AUTORUN.SYS file..."
SZ 40 OPEN #1,8,0,"D:AUTORUN.SYS":FOR I=1
    TO 63:READ A:PUT #1,A:NEXT I:CLOSE #1
   :? :? "AUTORUN.SYS written!"
GC 50 DATA 255,255,0,6,50,6
IC 60 DATA 160,0,140,47,2,169,117,141,198
   ,2,141,200,2,24,165,88,105,122,133,203
   ,165,89,133,204,185,40,6,145
AH 70 DATA 203,200,192,11,208,246,169,13,
   141,74,3,96,50,53,46,2,36,26,45,37,46,
   53,2
FR 80 DATA 224,2,225,2,0,6
```

Listing 1

LISTING 2 MENU PART 1

This is a very short program which changes the screen colours, mutes the I/O beep, and prints a title to the screen. The program then loads and runs Listing 3. When you have typed in Listing 2, you MUST save it under the filename 'D:MENU', or the Autoboot program will not be able to find it!

LISTING 3 MENU PART 2

This is the main menu program, which lists the available files, allows you to choose one, and then loads it together with a countdown timer. When you have typed in Listing 3, you MUST save it under the filename 'D:MENU2'.

HOW TO USE MULTILOAD XE

Once you have typed in and saved the listings, run Listing 1 to create your Boot disk. Then make sure you also have Listing 2 (D:MENU) and Listing 3 (D:MENU2) saved to the same disk - the menu should now autoboot if you turn on your machine with the disk in drive 1 (make sure you don't hold down OPTION when turning on, or on older machines ensure that the Basic cartridge is plugged in).

The only program you need to change to enter new items onto the menu is Listing 3 (D:MENU2). Once you have booted the menu (the menu will be displayed, plus the message 'Load Which Program?'), press System Reset. You can now LIST the

XE

program and alter it.

You will see on Line 1 the DATA statement containing the first menu entry. To add a new program, simply add a new line on the next available line number. The first element of the DATA statement is the text for the menu screen - always start this with the next available letter of the alphabet, followed by 21 characters of text for the title. The next two elements are the loading time in seconds in reverse digit order; the first number is the units, the second is the tens - for example, 2 seconds would be '2,0' while 12 seconds would be '2,1'. The last element is the actual filename of the program (e.g. FILENAME-.EXT) - the program assumes Drive 1, so no 'D:' drive identifier should be used. Finally, on line 0 add one to the value of 'P' (i.e. 'P=2') - this variable tells the menu how many entries to look for, and should always equal the number of programs on the disk.

For example, you wish to add a Galaxians game called 'GALAX.BAS' to the menu. First, copy the actual file to the menu disk. Time how many seconds the game takes to load on a clock/stopwatch (for example 14 seconds), and make a note of this. Next, load 'MENU2' and change line 1 to the following:

1 DATA A ...... Super Galaxians,4,1,GALAX.BAS

For your next entry, follow the same procedure, but enter the data on line 2, for example:

2 DATA B .... Space Attack,8,0,SPACEATT.BAS

Don't forget to change the value of 'P' on line 0 to 'P=2'. You should limit the number of entries per menu to 18, or the menu will roll off the bottom of the screen.

Lastly, once you have made your entries, re-save the menu program to disk under the original filename 'D:MENU2'. When you reboot the disk (or type 'RUN') the menu will appear, and you can proceed as normal. Make sure you have saved your amended 'MENU2' before rebooting or RUNning!

TROUBLESHOOTING

The program is fairly easy to use once you have got the hang of the DATA statements, but if problems occur, do not fear. Here are solutions to the most obvious problems.

```
CS 1 REM ################################
KK 2 REM #           MULTILOAD          #
OT 3 REM #          (Listing 2)         #
ST 4 REM #       by Karl Fitzhugh       #
SG 5 REM # ---------------------------- #
AU 6 REM #  NEW ATARI USER - JUN 1993   #
CY 7 REM ################################
YE 10 GRAPHICS 0:POKE 65,0:POKE 752,1:POK
   E 710,117:POKE 712,117:POSITION 14,11:
   ? "MULTILOAD XE":RUN "D:MENU2"
```

Listing 2

```
NB 0 POKE 842,12:P=1:REM ** NO.OF PROGS -
    MAXIMUM 18
LQ 1 DATA A.........Program Name,2,0,FILE
   NAME.EXT
EA 50 POKE 622,255:GRAPHICS 0:POKE 752,1:
   POSITION 14,11:? "MULTILOAD XE":POKE 7
   10,117:POKE 712,117:POSITION 0,23
WU 60 FOR I=1 TO 10:? :NEXT I:POKE 203,PE
   EK(546):POKE 204,PEEK(547)
YG 70 DIM A$(22),FN$(12):FOR I=4 TO P+3:R
   EAD A$,Y,Z,FN$:POSITION 9,I:? A$:NEXT
   I
JD 80 RESTORE 500:FOR I=1536 TO 1545:READ
    B:POKE I,B:NEXT I:FOR I=1556 TO 1622:
   READ B:POKE I,B:NEXT I
YH 90 POSITION 10,23:? "Load Which Progra
   m ?";:OPEN #1,4,0,"K:"
HF 100 GET #1,A:IF (A-64)>P THEN 100
CU 110 DIM F$(14):F$(1,2)="D:":F$(3)=FN$:
   POSITION 1,(A-64)+3:? "LOADING":RESTOR
   E (A-64):READ A$,Y,Z
PE 120 POSITION 32,(A-64)+3:? "LOADING":P
   OSITION 10,23:? "                    "
   ;:POSITION 9,1:? "Time To Go: ";
SG 130 ? Z;Y;" Seconds":POKE 206,Y:POKE 2
   07,Z:X=USR(1536):RUN F$
XY 500 DATA 104,162,6,160,20,138,32,92,22
   8,96
DF 510 DATA 230,205,165,205,201,51,208,43
   ,160,62,169,0,133,205,198,206,165,206,
   201,255,240,7,105,16
GS 520 DATA 145,88,76,71,6,136,198,207,16
   5,207,201,255,240,16,105,16,145,88,200
   ,169,9
EB 530 DATA 133,206,105,16,145,88,76,95,2
   28,165,203,141,34,2,165,204,141,35,2,7
   6,95,228
```

Listing 3

The new entry doesn't appear on the menu! Firstly, did you re-save 'MENU2' before running it? Did you change the value of 'P' in line one to include the new entry?

I get an error message when I select the entry I want to load! Is the filename at the end of the DATA statement correct, and without a 'D:' identifier? Did you actually copy this file to the disk?

The program I choose loads, but doesn't run correctly! Multi-load XE uses a machine code routine in pages 0 and 6 of memory for the timer. If the program you are loading uses page 0 or page 6 for machine code, a conflict is possible. Any well-written program should clear out this memory before it uses it, but if you have problems try adding the following line to the start of the program (line 0 is not usually used):

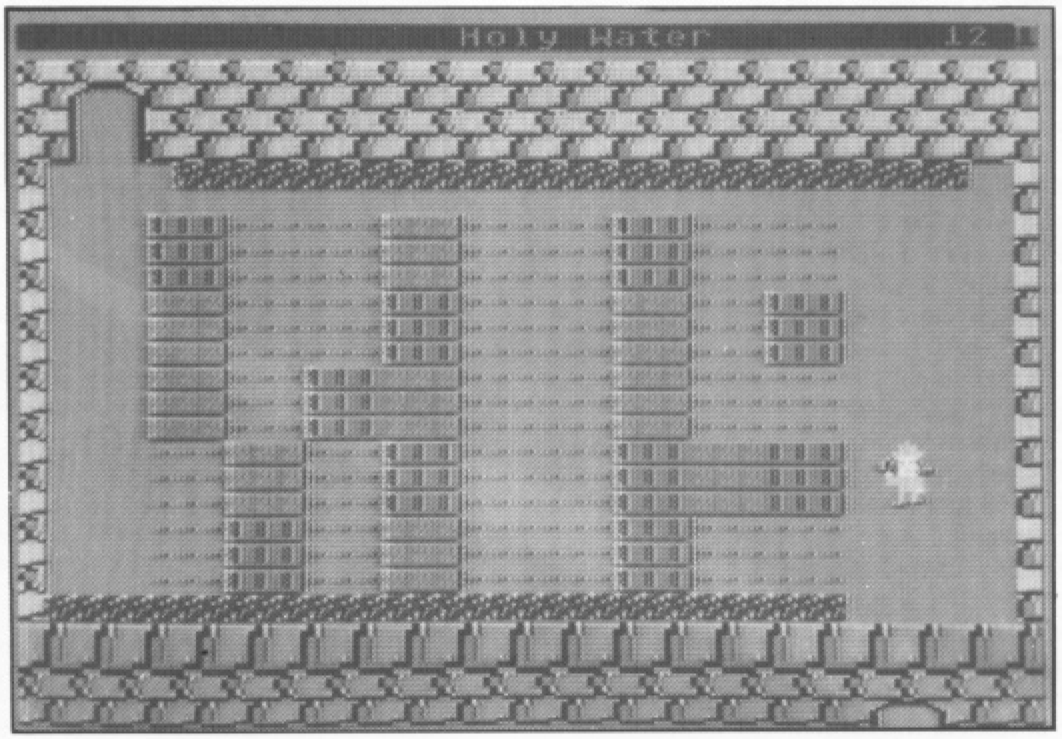
FOR A=203 TO 207:POKE A,0:NEXT A:FOR A=1536 TO 1622:POKE A,0:NEXT A

This clears out the memory and should cure the problem. If the program still crashes, subtract one from the timer value in the 'MENU2' program - this will ensure that the machine code is not still running when your chosen program tries to run.

I hope you find Multiload XE useful. Feel free to customise the display to your own preference, but avoid changing any of the data other than that described above, or you may crash the machine code routines.

Last, but not least, have fun!

CROOKED HOUSE



It's one of those wild, windswept nights and your car splutters to a halt, miles from anywhere. A flash of lightning illuminates an old mansion in the distance. You pull up your collar and dash to the house through the torrential rain.

You're invited in but soon you realise something is not quite right. Candlesticks keep disappearing and you keep falling over used syringes. Money appears then disappears. That object in the corner looks remarkably like a bomb! You are thinking about the woman upstairs who seems to have more than her fair share of men friends when your train of thought is broken by the sharp crack of a revolver .....

Can you be the first to discover the identity of the thief, the drug pusher, the blackmailer, the terrorist, the prostitute and the murderer and then telephone the police with your answers?

One to six players attempt to solve the crimes. Move the joystick to select the number of players and press the joystick trigger to commence each players turn. Turns last two minutes unless an incorrect accusation is made or until the player falls foul of a "nasty". The 20 suspects have keys to the safe rooms and bedrooms whereas you don't! The contents of the cupboards will help you through and you can pick these up by positioning yourself in front of a cupboard (the contents will appear on the left of the display line) and pressing the trigger. The object held appears in the middle of the display line. At the end of your turn your weapon transfers to the next player.

In order to accuse suspects you need to find out their names. Do this by standing in front of them. To use the phone position yourself in front of it and press the trigger. Move the joystick to select the appropriate suspect then press the trigger to accuse.

```
CS 1 REM ##################################################
HP 2 REM #          CROOKED HOUSE              #
FU 3 REM #           (LISTING 1)               #
FV 4 REM #               by                    #
IQ 5 REM #          Bill Halsall               #
SH 6 REM # ----------------------------------- #
AV 7 REM #  NEW ATARI USER - JUN 1993          #
CZ 8 REM ##################################################
AY 10 REM
BC 12 REM
NA 14 REM  BOOT TAPE/OBJECT CODE FILE
           MAKER - BASED ON HEXSAVER
                BY NICK HIGGS
BK 16 REM
PD 20 DIM LINE$(96),A$(8192):LINE=990:CNT
   =-48:TRAP 100:GOSUB 200
LM 30 A$(1)="0":A$(8192)="0":A$(2)=A$
RG 40 LINE=LINE+10:CNT=CNT+48:READ LINE$,
   CHKSUM:? "CHECKING LINE ";LINE
IH 50 CHK=USR(1536,ADR(LINE$),ADR(A$)+CNT
   )
QI 60 GOSUB 300:GOTO 40
VH 100 IF PEEK(195)<>6 THEN ? "ERROR ";PE
   EK(195);CHR$(253):END
AL 110 ? "WORKED OKAY":TRAP 100
RX 120 ? "(D)ISK OR (T)APE":GOSUB 180:IF
   K=68 THEN 140
AK 130 ? "READY CASSETTE AND PRESS RETURN
   ":OPEN #1,8,128,"C:":GOTO 160
KV 140 ? "READY DISK AND PRESS RETURN":GO
   SUB 180:IF K<>155 THEN 140
WW 150 OPEN #1,8,0,"D:CROOKED.OBJ"
AP 160 ? #1;A$(1,7680):CLOSE #1:END
ZH 180 CLOSE #1:OPEN #1,4,0,"K:":GET #1,K
   :CLOSE #1:RETURN
MQ 200 FOR A=1536 TO 1658:READ D:POKE A,D
   :NEXT A:RETURN
IX 210 DATA 216,104,104,133,204,104,133,2
   03,104,133,206,104,133,205,169,0,141,1
   27,6,141
IZ 220 DATA 128,6,160,255,140,125,6,140,1
   26,6,173,126,6,201,47,208,11,173,127,6
QG 230 DATA 133,212,173,128,6,133,213,96,
   172,125,6,200,140,125,6,177,203,32,111
   ,6
IS 240 DATA 10,10,10,10,141,123,6,172,125
   ,6,200,140,125,6,177,203,32,111,6,24
ZH 250 DATA 109,123,6,172,126,6,200,140,1
   26,6,145,205,24,109,127,6,141,127,6,17
   3
MY 260 DATA 128,6,105,0,141,128,6,76,30,6
   ,96,201,58,144,4,56,233,55,96,56,233,4
   8,96
YL 300 DLNE=PEEK(184)*256+PEEK(183)
RV 310 IF LINE<>DLNE THEN ? "LINE ";STR$(
   LINE);" MISSING!":END
QZ 320 IF CHKSUM<>CHK THEN ? "ERROR IN DA
   TA AT LINE ";STR$(LINE):END
ZF 330 RETURN
JR 1000 DATA 003C00202720A9008D2F02A93C8D
   02D3A9008DE702850EA9388DE802850FA92885
   0AA920850B18604C793A48A90A8D0A,4017
DZ 1010 DATA D48D16D0A9408D09D4A9188D17D0
   A9458D0002684048A9088D0AD48D16D0A9248D
   18D0684020AA32207E3D20433DA5C4,5016
OD 1020 DATA F005A5148DC002A92B8D0002A920
   8D01024C62E47030C2004830040404040404040
   0404040404040404040404040404484,2557
FB 1030 DATA 000504044174200000000000000000
   007EE5E5E57979BED7555555555555AAFF5555
   5555555AAFF579F9E5E5E5E5EA7F57,5290
CX 1040 DATA 5E7AEBEEFAEBEEFFBEEBAABEEBAA
   BED5B5ADEBBBAFEBBBFAEBEEFAEBEEFAEBEBAA
   BFEBAABEEBAAEFEBFBFFEBFBEFEBEE,10338
NW 1050 DATA FAEBEEFAEBEEFABEEBAABEEBAAAA
   AABBAFEBBBAFEBBBAF575C70C0C0C0C0C0FF00
   0000000000000D5350D0303030303C0,6774
XF 1060 DATA C0C0C0C0C0C0C000000000000000
   0003030303030303FFEAEFEAEFEAEFEAFFAB
   FBABFBAB9B5BEFEAEFEAEFEAEAFF9B,6855
```

continued

by Bill Halsall

TYPING IT IN

Cassette and disk users should type in Listing 1, SAVE or CSAVE a copy, then RUN the program. The program will check each line of data and inform you of any errors. Correct any errors and RUN the program again until all errors are eliminated. When this is done answer the cassette/disk questions accordingly to create a boot tape or binary disk file.

Cassette users should load the boot tape created by firstly removing all cartridges and then turning on the computer while holding down the START key (XL and XE owners should hold down OPTION as well). Press RETURN and the tape will load and run automatically.

Disk users should clear Listing 1 from memory after saving and running it as above by typing NEW and pressing RETURN. Next, type in Listing 2 and save it on the same disk as the binary file created by Listing 1. RUN the Listing 2 program with the disk in the drive and the game will load and run automatically.

HINTS TO GET YOU THROUGH

The suspects tend to use the same routes through the house unless they are going to bed.

The prostitute likes men in her bedroom.

Drug addicts use their disposable syringes and drop them as soon as they get them from the pusher. Being bio-degradable they will eventually disappear.

The terrorist has a tendency to leave bombs where he/she can pick them up later.

The blackmailer is only here for the money.

Listen for shots and follow trail of spent bullets (or bodies!) to find the murderer.

The thief will steal anything which isn't nailed down.

Unfortunately, two people are having an affair and a gigolo is on the loose which can complicate matters.

Painting by numbers is a useful skill in the mosaic room!

The grinding wheels can give you a nasty crunch!

The display line contains details of cupboard/suspect examined, object held, shot details, room and player numbers. Please note that the room numbers are for reference only and some numbers are missing (e.g. 6,7,8) so don't waste time looking for rooms which don't exist.

The game ends when all six criminals are identified. Press trigger to play again. The criminals and weapons change each time.

CROOKED HOUSE

```
LF 1070 DATA ABFBABFBABABFF03030F0F010705
   0530F0FCFC50745454013E3E3E3E3E1E904F
   EFEFEFEFAFAD0F0F03030303030AFC,4888
BF 1080 DATA FCF0F0F0F0F0E8150415111111111
   111111150404040400000000000206090A0028
   A8AAAA8A40A02B2E2FABABAE2F0AE8,3764
OC 1090 DATA B8AAEAAAAAFAA80A252725290A02
   05A05878985860605415151F3F1F1F0701575D
   7DFDFDFDF4F00301010000000000F0,4410
RO 1100 DATA F070505050D030000000822200803
   031010800000000C0C0030F3F3F3F0F03C0F0
   FCFCFCFCF0C088004444CCCCFF0C80,4715
VI 1110 DATA 004040C0C0C0000C0C3FFF000000
   00000000C00000000000051A151A1A1A064090
   509090909040010101010105150000,2359
MX 1120 DATA 00000000040500003FFFF30F3D37F7
   FDF0FC3CC0F0707CFC030F3F3535350135C0F0
   F0F07070005C757D7F4F4F1F1F3F74,5098
QP 1130 DATA F1F1C4D0D0F0F03F0F0404040404
   0CF0C0404040404040C00025959D260501010060
   58D8586000003FFFCFCFCFCFCFCFF0,5400
KE 1140 DATA FCFFF3F3F3F3F33A2A2A28282828
   3CACA0A0A0A0A0F0000F0F3F050525292AF0F0
   FC605450505002A2A2B2B2B2A0A02A8,5106
SQ 1150 DATA A8A8AAAAEAAAA8030303030303030303
   03F0F0F0F0F0F0FC00000000D0D7D7F50000
   0000F0FFFF5F0000000000003D75700,5237
VU 1160 DATA 00000000C0EAEA0000040CFCFBFE
   FF000000000000417D7D70008080808000400007FFD
   E3DF7FFDF7DF051010AAAAAFAFAF40,4827
MT 1170 DATA 1010A8A8E8E8E8ABABABABABAA2A
   00A8A8A8A8A8A0000000003CC33C0000000081
   8184908080800081C1C3E3E1C081C1C,4812
JF 1180 DATA 185C7E7E7E1E1E1414040000000000
   00005CBCBCFD575C000000000002000003006A900
   8D2F02A9408D07D4A9E08DF402A200,3448
FC 1190 DATA BD97209D0040BD97219D0041BD97
   229D0042E8D0EBA9038D1DD0A9218D6F02A900
   8D08D2A9038D0FD2A9748D3002A920,5209
EA 1200 DATA 8D3102A208BDE2239DC002CA10F7
   A93A8D2F02A055A220A907205CE4A9C08D0ED4
   607826C6E80036003494A227A9009D,5205
XY 1210 DATA 0048CA10FA6020EB23A21CBD2A24
   9D0548CA10F720762420EB23A211BD47249D0B
   48CA10F7207624A21CBD59249D0548,4686
TZ 1220 DATA CA10F720762420EB236023B22FAF
   2BA52400A82FB533A500627900226 96C6C0028
   616C73616C6C666F72002E25370021,4085
ZW 1230 DATA 342132290035332532226 1736564
   006F6E00616E006964656100627900 2C0E0028
   21372B2533A9968D1C02AD1C02D0FB,3333
QI 1240 DATA 6020012520 1925A200A9019D2848
   9D78489DC04BA9029D29489D79489DC14BA903
   9D50489DA0489D984B9DE84BA9049D,4898
AZ 1250 DATA 51489DA1489D994B9DE94BE8E8E0
   28D0C860285078A0C8F018406890B8E0083058
   80A8D0F820487098C0E81048484848,6201
SZ 1260 DATA 48484949494949494 94A4A4A4A4A4A
   4A4B4B4B4B4B4B4CBDC22485CBBDDC2485CC60
   A2008A9DC8489DC8499D984AE8D0F4,5485
XJ 1270 DATA 6020F624A5B191CB60A204A000A9
   0185B1201125A027E6B1201125A028E6B12011
   25A04FE6B1201125E8E8E016D0DC60,5439
SI 1280 DATA 20F624A5B191CBE6B1C8A5B191CB
   E6B160204025C8A5B191CBE6B1888860204025
   88E84C4025A002A201A90585B12051,6202
AP 1290 DATA 25E8205125E84C5125A00CD0EBA0
   16D0E7A020D0E3A002A201A90E85B1205125E8
   205125E8A91185B14C5125A00CD0E7,5591
BC 1300 DATA A016D0E3A020D0DFA003A218A905
   85B14C5125A00DD0F3A017D0EFA021D0EBA003
   A218A90E85B14C5125A00DD0F3A017,6000
BB 1310 DATA D0EFA021D0EBA006A201A91485B1
   4C5E25A010D0F3A01AD0EFA024D0EB20D62520
   E12520E5254CE925040C141C242C34,5434
XN 1320 DATA 3C44040C144C0C142C3C04142434
   1C2434440434441C242C3C440C1C2C3C030303
   030303030303031C1C1C030C0D0E0F03,1347
ST 1330 DATA 0303030808080808A253A9009D704C
   CA10FAA218BD1E269D404CCA10F7A20BA9009D
   594CCA10FAA21020FF2CA8B9594CD0,4840
TF 1340 DATA F78A99594CE8E01CD0EEA200BDF9
   2585B22088260 5B2A8B9704CD0F5BD404C9970
   4CE8E025D0E560AD0AD2290360AD68,6470
LZ 1350 DATA 4C2904F0034C4B2720812420ED25
   AD684C297C8D684CF015208525209C2520A025
   20A425AD684C297CC950F01B20BF25,4372
JK 1360 DATA 20CA2520CE2520D225AD684CD00A
   A9368D2B49A9378D2C49AD684C297C8D3927F0
   29AD392738E9058D3A27203B27D003,4536
VG 1370 DATA 206625203B27D00320792520 3B27
   D003207D25203B27D003208125AD3927C950F0
   261869038D3A27203B27D00320A825,3552
IO 1380 DATA 203B27D00320B325203B27D00320
   B725203B27D00320BB25600000EE3A27AE3A27
   BD704CC903F002C91C602081242085,3991
OE 1390 DATA 2520D22560A2008A9D00449D0045
   E8D0F78D1ED060A6B3A000844D989DF8439DF8
   44E8C8C024D0F4A200A4B3BD572399,6217
FR 1400 DATA 0044BD6B23990045C8E8E014D0EE
   ADB727D01BEEB727AD6923491 48D6923AD7D23
   49368D7D23AD7E2349368D7E23A5B4,5389
KL 1410 DATA 8D00D08D01D06000A9028D1C02AD
   1C02D0FB60A9008DB727AD780229 01D00320F1
   27AD7802290 2D00320FD27AD780229,4496
TY 1420 DATA 04D003201128AD78022908D00320
   1D2860A5B3C92CF00F38E9044C0628A5B3C9DC
   F003186904 8D3228A5B48D31284C37,4393
IW 1430 DATA 28A5B4C934F00F38E9024C2628A5
   B4C9C4F0031869028D3128A5B38D32284C3728
   00003A628AB2AD3228C92CF007C9DC,5078
BT 1440 DATA F00D4CF22820F228A5B5C911F00B
   6020F228A5B5C90EF03C60AD684C8D284F2904
   F016AD684C38E9048D684C2903AABD,5397
ZM 1450 DATA 332885B4A9BC4CCE28204629AD68
   4C297C38E904186D5A298D684CA9B685B4A9BC
   4CCE28AD684C8D284F2904F016AD68,5162
OU 1460 DATA 4C1869048D684C2903AABD332885
   B4A9444CCE28204629AD684C297C186D5A2969
   048D684CA93A85B4A9444CCE2885B3,4662
BV 1470 DATA 208E2620552720153A4C6527AD31
   2838E9304A4A85B9AD322838E91C4A4A4A85BA
   6020DC28A6BA20F624A4B9B1CB85B5,4978
GG 1480 DATA C8B1CB85B6981869 27A8B1CB85B7
   C8B1CB85B8AD312885B48D00D08D01D0AD3228
   85B34C6527205527A6B0BD294F8D68,6093
WC 1490 DATA 4C208E26A98085B4A9B085B32065
   278D1ED020D33C60A5B438E930A00038E92890
   04C84C4E298C5A296000A6BCBDE04D,5430
II 1500 DATA 3025AD0AD21020BDF84C300EBD48
   4DC916D0034C852AFE484D60BD484DC901D003
   4C852ADE484D60A6BCBDE04D30F8BD,5421
NP 1510 DATA D04C0A0A187D344D9D084ECD684C
   D0E7BD412B85B1BDF84C3006BD0C4D4CB329BD
   204DA8B9DC299DE44CA8BD484DAAE0,5670
AY 1520 DATA 01F0C4E016F0C020402588E8E016
   F0B720402588E8E016F0AE4C4025020C1620AD
   684CF017AD5248C905D006206625 4C,5301
DC 1530 DATA FC29208525AD684C2904D005A002
   204D2AAD5C48C905F00AC90ED00E209C254C15
   2A207925A00C204D2AAD6648C905F0,4319
GZ 1540 DATA 0AC90ED00E20A0254C2E2A207D25
   A016204D2AAD7048C905F00AC90ED00E20A425
   4C472A208125A020204D2A60A20420,3874
ET 1550 DATA F624A90091CBC891CB88E8E016D0
   F060A215A9009DAB4DCAD0F8BD704CC903D00E
   8A290385B28A4A4AA8A5B299AC4DE8,6647
IY 1560 DATA E054D0E660A6BCBDD04CDD844DD0
   09BDF44DF004DEF44D60BDD04C9D5C4DBD344D
   9D0C4DBD704D9DD04CBD204D9D344D,6475
LP 1570 DATA A6BCBDD04CDD844DF004100D301E
   BDF44DD03E20022B4CB02AA9809DF84CA9169D
   484DBDD04C38E9014CEC2AA9009DF8,5725
UQ 1580 DATA 4CA9019D484DBDD04C1869019D70
   4DDD844DF007A8B9AC4D4CFE2ABD984D9D204D
   60A6BCAD0AD2291F38E90C90F40901,5450
TL 1590 DATA DD844DF0ED9D844DA8B9AC4D9D98
   4D60A213AD0AD2290F09019DD04C1869019D70
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   4D9D484D9DF84C690120152BCA10E2,5347
WG 1600 DATA 602424A4A43838B8B81818989844
   44C4C43E3EBEBE002D697373002164616D7301
   2D73002269736C657474022D730023,4247
MY 1610 DATA 6872697374790 32E757273650024
   726577042D727300256C6C6973053369737465
   7200266F78062D697373002772696D,3921
UX 1620 DATA 6D072D7273002861676708236170
   7461696E002976657309266174686572002A6F
   6E65730A27656E6572616C002B7261,3780
BR 1630 DATA 6D6572082A75646765002C656163
   680C2472002D7572646F63680D2472002E696C
   73736F6E0E30726F66002F6C73656E,3838
DK 1640 DATA 0F296E73706563746F7200306 16C
   6D6572102D72003175696E6E112D7200327564
   6765122D72003379 6B6573132D7200,3674
RY 1650 DATA 34776973737414A5B38D3228A5B48D
   312820DC28A91385BCA6BC3023BD084ECD684C
   D016BD484DC5BAD00FBDE44CC5B9D0,5832
MO 1660 DATA 08A9019D704E206F2CC6BC4C472C
   6020CC39A4BC8C8B4EC88C8C4EA200A000B955
   2BCD8B4EF004C8D0F560C8E8B9552B,5740
PT 1670 DATA CD8C4EF0079DFF47E016D0EF60A2
   13A9009DE04D9D304F9D704ECA10F420492EFE
   E04D8EDA4D20492EFEE04D8EDB4D20,6162
PB 1680 DATA 552EFEE04D8EDC4D20552EFEE04D
   8EDD4DA00520F42CAABDE04DD0F7FEE04D8A99
   CF4DC8C00BD0EB20392FA90A8D3C4F,6454
YL 1690 DATA 8D3F4F60AD0AD2291F38E90C90F6
   60AD0AD2290F38E90490F660A200BD304FD008
   BD3A4FF006DE3A4FDE304FE8E00AD0,5507
EU 1700 DATA EB602044 2D8E1C4E20442DEC1C4E
   F0F88E1D4E20442DEC1C4EF0F8EC1D4EF0F38E
   1E4E6020FF2CA8B9542DAABD704CC9,5656
OZ 1710 DATA 1CD0F160040506070C0D0E0F1415
   1617AD214ED02220552EBDE04DD01A8E204EAD
   1C4E20882DAEDA4DAD1C4E20882DA9,4022
YW 1720 DATA 288D304F8D214E6020912DA9649D
   F44D6085B229039D984DA5B24A4A9D844D60AD
   224ED02A20492EBDE04DF00820492E,4990
MV 1730 DATA BDE04DD01AAD1D4E8E1F4E20882D
   AEDD4DAD1D4E20882DA9148D374F8D224E60AD
   234ED0FAAEDC4DAD1E4E20882DAEDB,5348
YL 1740 DATA 4DAD1E4E20882DA9018D404F8D23
   4E60AD304F0D3A4FD00320602DAD314F0D3B4F
   D00320C62EAD324F0D3C4FD0032069,3950
OJ 1750 DATA 31AD334F0D3D4FD003209F30AD34
   4F0D3E4FD00320AD2FAD354F0D3F4FD00320C6
   2FAD364F0D404FD00320D02DAD374F,4089
JO 1760 DATA 0D414FD00320A02D60AD0AD22907
   AABDE04DD0F56020FF2C186908AABDE04DD0F4
   60AD234EF014AEDB4DACDC4DAD1E4E,5793
HQ 1770 DATA 20AE2E8D234EA9968D364FAD224E
   F014AEDD4DAC1F4EAD1D4E20AE2E8D224EA996
   8D374FAD214EF014AEDA4DAC204EAD,5244
PP 1780 DATA 1C4E20AE2E8D214EA9968D304F60
   4A4ADDD04CD008D9D04CD003A90060A9059DF4
   4D99F44D60AD244ED015AED44DBDD0,5737
OZ 1790 DATA 4C2901D00BBD084ECD684CF0038D
   244E60AD244EF0FA4A4A85B2AED84DDDD04CF0
   EE30061869024CFD2E38E9029D844D,5494
BU 1800 DATA A8B9AC4D9D984D60AED84DBD084E
   CD684CF00FCD244ED00AA9008D244EA9018D3B
   4F60AD684CF010CD244ED00BA92085,5453
DE 1810 DATA B1A20AA014205E2560A20320F42C
   A8B9E04DD0F7989D264ECA10F060AD384FD032
   AED74DBD084E4A4A85B22901D024A2,5575
WF 1820 DATA 03BD264EA8B9D04CC5B2F004CA10
   F260B9E04D300EAED74DBD084E8D254EA9148D
   384F60AD684CF00FCD254ED00AA91E,5571
YG 1830 DATA 8D1A4AA91F8D424A60AD3F4ED00E
   20F42CF0FBAABDE04DD0038E3F4E60AC3F4EF0
   FAAED94DB9844DDDD04CF0EF20FD2E,6395
BQ 1840 DATA A9288D344F60AC3F4EF0E1CC1F4E
   F0DCCC204EF0D7AED94DBDD04C2901D0CDBD08
   4ECD684CF0C5D9084ED0C0A9288D35,6496
GQ 1850 DATA 4FA91085BDAD0AD22907F033A900
   A004991E488810FAAED94DBD084E8D8D4E38ED
   684CB004A95CD002A95D8D2248A928,5253
AO 1860 DATA 8D344FA003B96630991E488810F7
   60BD084E99084EA91C99E44CAD3E4E18690599
   484DA98099E04D98AC3E4E992A4EEE,5163
FT 1870 DATA 3E4EBD084E99344EA9008D3F4E8D
   8D4EA9088D3F4F6033282F34A20086B2AD684C
   F021DD344ED014BD2A4E4AA8B99530,4867
NX 1880 DATA 85B1E8E8E8E8A01C205125E6B2
   A6B2E00AD0DA604ACA4ACA4DCD4DCD4DCDAED6
   4DBD084ECD684CF0164A4A2901D010,6515
TY 1890 DATA ADDE4DD00CBD084E8DDE4DA9018D
   3D4F60DD084ED0FAA900F0EEAD684CF0F1CDDE
   4DD0ECA92A85B1A211A025205E2560,6304
JN 1900 DATA A20FAD0AD22907186901 0A0A0A9D
   404EAD0AD22907A8B90B319D504EAD0AD2290F
   1869049D604ECA10D8600406090E18,3746
AF 1910 DATA 1A2325A90F85B2A6B230A5AD684C
   F0A0DD404ED017E0073004A92ED002A93285B1
   BD504EA8BD604EAA205E25C6B24C17,5420
UK 1920 DATA 31AED54DBD084ECD684CF038A000
   CD244ED0048C244E60CD254ED0048C254E60CD
   DE4DD01F8CDE4D60AED54DA00FB940,5559
CZ 1930 DATA 4EDD084EF0048810F560A9009940
   4EA9028D3C4F60AD8402D010A5B5C936F00BC9
   37F007A5B6C936F00160A013B9704E,5512
JH 1940 DATA D0048810F860A90085B220D739A4
   B2C006F04FB98D32A8A200B951329D1148C91F
   F005E8C84CB931A90085BCA4BCB970,5977
VH 1950 DATA 4EF014206F2CA91420BA27AD8402
   F011AD7802C90FF0F4E6BCA5BCC914D0DDF0D7
   AD8402F0FBA4B2A5BC99854EE6B24C,6747
NO 1960 DATA AA31A9008D844EA200BDD54DDD85
   4ED003EE844EE8E006D0F020CC39A206BD9332
   9D0248CA10F7AD844E1869108D0048,5665
AT 1970 DATA A932207824AD844EC906F00FAD68
   4C8D284FAD684C8D284F4CE93BE6C320E73260
   34282925261F342532322F32293334,4349
FU 1980 DATA 1F243235270030353328 25321F22
   2C21232B2D21292C25321F2D35322425322532
   1F30322F333429343534251F000610,1914
UR 1990 DATA 1C2831232F3232252334AD684CF0
   0ACD8D4ED005A9508D374960A5BDF00AC6BDA5
   BD8D00D28D01D260A95138ED684CA8,5312
HK 2000 DATA A9108D24488D2548C000F01AA203
   CAFE23488D2348C91AD009A9109D2348E000D0
   EC884CC83260A006B90033991148B9,5114
NM 2010 DATA F932991C488810F160003435322E
   331D332F2C36252401AD9C4ED033A5B4C984D0
   3A206033A93085BEA9C885BF8D9C4E,4989
BR 2020 DATA A90A8DC2028DC302A040A200BD4D
   33990046990047E8C8E008D0F1C0D0D0EBA5BE
   C978F007E6BEC6BF205533607BF1E4,6548
IM 2030 DATA 0EDFDE0571A5BE8D02D0A5BF8D03
   D060A900AA9D00469D0047E8D0F760AE904EBD
   914ED013A5B4C984D019FE914EBD57,6363
NX 2040 DATA 3485C0BD603485BE208B33207B34
   2095332055336 0AE904EBD45348DC2028DC302
   BD4E348D8E4E8A0AAABD693485CBE8,5255
XZ 2050 DATA BD693485CCA000A6C0B1CB9D0046
   E8C8CC8E4ED0F42055336000000144A2A2AAABE
   BEFEFE7E1C1C1C1C0000808081C1C,4934
UK 2060 DATA 1C1C1C22224141414141 22221C00
   00000038547C2C181A5FFFFFFFFFFFFEFE7C18
   000008087E5A7E2E2C381C745652AB,3944
TO 2070 DATA A9A5B594000000402FF020407FE07
   80C07CFF7CC080492ABC7F3CFE29480101017F
   7F7F3F3F1F1F0F07000000FCFCFCF8,4796
Y5 2080 DATA F8F0F0E0C0001ECC0E007C1C3A3C
   0012141413050307080 0D01ED01E0000000000
   7C7C647C30C830000000C933DB33EF,3767
FA 2090 DATA 33033416341B341E342534A5B438
   E5BEF00D9007E6BEE6BE4C8F34C6BEC6BEA5B3
   38E5C0F00D9007E6C0E6C04CA334C6,6099
5D 2100 DATA C0C6C060AE904EBD914ED019A5B4
   DDE434D02CFE914EBD603485BE20603320EF34
   A90A85BDAE904EE006F014E6BEE6BE,6683
IX 2110 DATA E6BE205533AE904EBDE734C5BEF0
   D760C6BEC6BEC6BE4CD23464B080A850A8A90C
   85B220FB34C6B2D0F960AD0AD22978,7026
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CROOKED HOUSE

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MZ 2120 DATA 18694485C04C9533206033A9018D
   994E20363585BE20FB3420363585BFA9478DBD
   3320FB34A9468DBD33205533A5BDD0,5085
MJ 2130 DATA 04A90C85BD60AD0AD2297F693460
   AD9A4ED01AA5B4C97CD04385BE8DC2028DC302
   A91F85C0EE9A4EA9FE8DA435A5BEC9,6331
NW 2140 DATA 70F004C980D00EADA43549FC8DA4
   35A90785BDA5BE186DA43585BE18690885BFE6
   C0208D35205533A97C85B460A4C0A2,6003
KF 2150 DATA 00BD2D34990046BD3934990047C8
   E8E00CD0EE60FEAD9B4ED01FA5B4C984D04B85
   BEA90E8DC2028DC302A97485BEA984,6191
DC 2160 DATA 85BFA91C85C0EE9B4E20CF3520CF
   35A5C0C9B4F02618690485C0A4C0A200BD0036
   990046BD1136990047C8E8E011D0EE,5962
OZ 2170 DATA 205533A9018D0AD08D0BD060A900
   F0F501010101030923882BABAFB1DBB55F350F
   0000000000802088A2A8AAEA1AB65AF4,4698
YZ 2180 DATA 58E0AD9C4ED034A5B4C988D03B8D
   9C4E206A36A9DA85B1A90E8DC702A205A90A85
   B2AD0AD2291F6902A8201125C6B2D0,5784
JX 2190 DATA F1E8E014D0E8A9078D6936AE6936
   F008A90C9DD042CE69366007A21FA9009DD042
   CA10FA602038372044372050372O5C,5240
QK 2200 DATA 37A900A20486C19DFB36CA10FAA0
   04AD0AD2290738E90390F6AABDFB36D0F0B900
   379DFB368810E7A90085B2A4B2B9FB,6389
AR 2210 DATA 368D373720DB3620F62420E23620
   DB36E820F62420E23620DB36E8E820F62420E2
   36E6B2A4B2C005D0D460A4B2B90537,5844
YV 2220 DATA AA60AE3737A005BD0A37098091CB
   C891CBC891CBC8E8C020D0ED6000000000000000
   09121B2406090C0F125A5D5C5B5C5D,4448
KD 2230 DATA 5A5D5C5B5C5D5A5D5C5B5C5A5D5A
   5D5B5C5D5A5D5C5C5B5C5A5D5C5A5B5A5B5D5A
   5B5D5C5B5C5D00A206BDCB379DD042,4619
LW 2240 DATA CA10F760A206BDD2379DD842CA10
   F760A206BDD9379DE042CA10F760A206BDE037
   9DE842CA10F760AD9E4EF006A5C1F0,6725
II 2250 DATA 03C6C160A91085C1EECA37206A36
   ADCA37C901F01BC902F025C903F02FA9008DCA
   37205C37A93C8DDB428DE3424C3837,5580
SZ 2260 DATA 203837A93C8DE3428DEB424C4437
   204437A93C8DD3428DEB424C5037205037A93C
   8DD3428DDB424C5C3700AA8A8A8A8A,5087
PD 2270 DATA 8AAAAA96A6A69A96AA0014041404
   1400556565696A5955A21EA9D19DCE489D714B
   CA10F760A207AD8F4285B2BD87429D,5494
JR 2280 DATA 8842CAD0F2A5B28D884260A225A9
   D19D6949A9569DB949CA10F3A95285B1A20AA0
   134C5E25A20FBD34382044389DA04E,5823
ND 2290 DATA CA10F4600D0D0D0D010902080405
   04070606030985B22088261865B260A253A900
   9DD04ECA10FAA94885B2A20FBDB04E,4087
EM 2300 DATA C5B2F02ECA10F6C6B2A5B2D0EEA9
   1085B2A20FBDA04EC5B2F011CA10F620B238A8
   B9D04ED0F7A5B299D04EC6B2A5B2D0,7555
UO 2310 DATA E0602098384C673820B238A838FD
   B04E90F6B9D04ED0F1989DC04EBDA04E99D04E
   60AD0AD2297F38E92C90F6297B60A9,6356
DU 2320 DATA 0C85B2A200A053B9704CC5B2F003
   88D0F6989DB04EE6B2E8E010D0E960002E6F74
   68696E670133636973736F72730228,5852
OO 2330 DATA 6F6C7900376174657203237 26F73
   7304226962 6C650521726D6F7572063368696 5
   6C640736657374082865 6C6D657409,3929
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RP 2340 DATA 356D6272656C6C610A216369640B
   2C616E63650C24796E616D6974650D30696E6B
   006B65790E32656400 6B65790F226C,3867
QP 2350 DATA 61636B006B657910376869746500
   6B657911AD684C2904D02120563CA5B3C92CD0
   18A90085B2A5B429FCC948F013C970,5076
YX 2360 DATA F00DC998F007C9C0F00160E6B2E6
   B2E6B2AD684C1865B28D264FAA8D274FBDD04E
   85B220E239AD8402D0DFA5BB85B2AE,6826
GJ 2370 DATA 274FBDD04E85BBA5B29DD04E20E2
   39A5BB85B2200D3AAD8402F0FB60A20FA9009D
   0048CA10FA60A20CA9009D1148CA10,5620
VS 2380 DATA FA6020CC39A200A4B28C8B4EC88C
   8C4EA000B9DD38CD8B4EF003C8D0F5C8B9DD38
   CD8C4EF0069D0048E8D0F16020D739,6639
ZX 2390 DATA A2114CE739A20FA9009D904ECA10
   FA208E3D20EB23203F3C2060338D1ED08D0AD0
   8D0BD0A9348DC70220BF3920B932AE,4989
QK 2400 DATA 684CBD704CF031C908F0112910D0
   1DBD704C38E90B8D9F4E200B386020E737EE9E
   4E20753620B8278D1ED060BD704C38,5014
IM 2410 DATA E90F8D904E20E7376020CF3D2081
   24207F23A90185C920F623206E3C2037262060
   2A20222D20BF382025382 04D38209D,3899
YB 2420 DATA 2C20202B20E030A90085C585C385
   BB85B0208E3DA205A9509D294FCA10F8202629
   20153A209B3D207B24209B3D207B24,4405
KQ 2430 DATA 209B3D20E029A91385BC205B2920
   8829C6BCA5BC10F420362C207B24A9028D1C02
   20C3272068372 0F5372048 3B20873B,4267
UV 2440 DATA 20BE3B20623920232F20842F209A
   3220133120CA3020622E200A2D20AC3C20F02D
   20E12E20082F204C2F208531A5C3D0,3582
MY 2450 DATA 0F20992F204131206A30207B244C
   C43AE6C5202E3D4C793AAE904EF07085C9BD91
   4ED006A5B3C9BA1063AD904E0AAABD,5239
CA 2460 DATA 6D3B8D6D3BE8BD6D3B8D6E3B4C6D
   336D336D336D33A434A434A43408353E35
   A53522360733AE9F4EF031BD9F4EC5,4763
FW 2470 DATA BBD02AA5B429F8C9780D022A5B329
   FCC970D01AA90185C8AE684CA9009D704CA225
   9D69499DB9499DE149CA10F460AD68,6428
FQ 2480 DATA 4C2904F079AD04D02908F00AADC7
   02C934F0164CDD3BAD0CD0290CF061AE904EF0
   5CBDA34EC5BBF030A6B0AD284F9D29,5856
RM 2490 DATA 4F208E3D20E03C205527AD8402D0
   FBA9008D904EE6B0A5B0C5C2D006A90085B0E6
   C52026292015 3A60AE684CA9009D70,5451
AN 2500 DATA 4C8D904E208E3DA90185C8A9A88D
   05D2206033206A36A9348DC7028D1ED060A5B0
   1869918D2748A6B0BD503C8DC00260,5248
AS 2510 DATA 78C85838081AA207BD663CC5B4F0
   04CA10F6604CCC39464C6E74969CBEC420EB23
   A209BDA23C9D0448CA10F7D00FAD78,5698
GX 2520 DATA 02C90FF017E6C2A5C2C907D004A9
   0185C21869108D0248A90A207824AD8402D0DD
   60306C617965720873091FAD434FD0,5019
XW 2530 DATA 09AD394FC97DD002E6C4AD434F0D
   394FD010AD684C2904D006AD684C8D284F4CE9
   3B60A9038D434FA9008D394F85C460,4991
UA 2540 DATA A93C85C6A5C6F0452901D019A93C
   38E5C68D06D269018D04D2A5C64A4A1869608D
   07D2D023A5C60A0A85B2A9F038E5B2,5940
BP 2550 DATA 8D06D2690F8D04D2A5C64A4A1869
   A08D07D28D05D220B827C6C64CE43C60A4C5A9
   108D234820C03220B33DAD8402D0FB,5563
GU 2560 DATA 4C793AA5C9F030A5C7290F85C7C6
   C7F00160A9A68D05D28D07D2A5CA290F85CA29
   03AABD783D8D04D2A5CA4A4A4AAABD,6089
FD 2570 DATA 7C3D8D06D2E6CA60514440448090
   A5C8F018C910F0080A0A8D04D2E6C860A90085
   C98D07D28D05D285C860A9028D1C02,5606
WG 2580 DATA 20C32720483B20BE3B20873B2062
   3920362C60A03CA9088D01D28C00D28C1AD020
   B82788D0F4A9008D00D28D01D260A0,4793
ZK 2590 DATA 1FA90099B0008810FAA94085CCA9
   0085CBA8A90091CBC8D0F9E6CCA5CCC950D0F1
   60000000000000000000000000000000,4977
```

●

```
CS 1 REM ####################################
ZC 2 REM #  LOAD AND RUN ROUTINE FOR    #
HQ 3 REM #          CROOKED HOUSE          #
SF 4 REM # ---------------------------- #
PT 5 REM # NEW ATARI USER - JUN. 1993  #
CX 6 REM ####################################
AY 10 REM
CZ 20 OPEN #1,4,0,"D:CROOKED.OBJ"
OC 30 POKE 850,7:POKE 852,0:POKE 853,32:P
   OKE 856,255:POKE 857,255
SN 40 X=USR(ADR("hhh▮LV▮"),16)
BQ 50 CLOSE #1:X=USR(8232)
```

MailbagExtra

YO, HO, HO ...
KEEP THE PIRATES ALL AT SEA

It was interesting to find amongst this latest batch of mail a number of comments on the subject of pirating software. I won't make any comment, let our readers speak for themselves.

Martin Beswick from Leeds wrote:

"I have been an Atari user for nearly 10 years and started out with an old 800 and 410 tape deck. At that time (1983/4) plenty of software did exist, but at £30 to £40 each (even for one cassette), whilst games for Spectrum, etc. were only a fiver. Games for a 14-year old boy were a rare occurrence. A couple of years later I acquired a 800XL, 1050 drive and a large number of new contacts with the same equipment. After years of being in the game wilderness I was presented with a chance to get all the games that I ever wanted, plus items from America that I had never heard of, for the cost of a few blank disks. After a few months, my collection grew to several hundred titles, and I was getting about 5 new games every month until about 1988. Then the software market totally dried up. No new games were being written in this country, and virtually none in any other. At the time I was furious with the software publishers, blaming them for being 'anti-Atari' and 'pro-Commodore' and I also accused the computer media of the same crime.

By now I had bought one full-price game and owned over 300 copied programs. Around this time I had chance meeting with one of the directors of English Software, the biggest UK company that produced Atari games. I complained that there was no new software being produced, and how his company had abandoned the Atari, but when he asked me how many English Software originals I owned compared to copies, I shut up quickly. I realised that I, my friends with Ataris, and thousands like us had been the cause of the death of the Atari 8-bit. My Atari gathered dust for a few years until I recently discovered the mail order companies in 'New Atari User', and now the only software I use (or need to use) are originals and I feel better about this. But when I try to understand why people pirated software in such large amounts, I can see a reason.

Ten years ago, a copy of 'War in Russia' (SSI) cost £45. Could any Atari user honestly say that they would today pay almost £90 (equivalent price) for this game or any other? When there is the option of a free hacked game instead of an original that costs half a weeks wages, then the choice is obvious. The question of who to blame for this is less obvious. The Atari 8-bit software market was killed off by the sheer number of pirates, but the pirates themselves were created because of the ridiculous prices of the software in the early 80s. As a consequence, when prices came down to a reasonable level, the pirates were still there, and the games collectors (like me) took anything on offer from them.

So, who can we blame? The software companies (including Atari) for selling software at a price that discouraged the buying of originals? The pirates that made sure that almost no-one bought the originals? Or the users who encouraged the pirates to exist in the numbers that they did? You decide, I can't."

Next from Richard Carter, in Bergerac country - Jersey, Channel Islands:

"Can I say to people that if they love their Atari Classic then they should not, on principle, pirate any software - and who hasn't at some time or other copied a computer or music tape? Maybe if suppliers make some money for their hard work the Atari Classic will keep going? Maybe even long enough that (some hope) the Atari bosses will realise what a mistake they made axing the best computer ever made. I can say this even though I own an Amiga. Have you tried Amiga BASIC? If you have, you'll appreciate how good Atari BASIC is, especially the Editor!"

Now we have some comments from "a pirate who has woken up":

"Piracy on the Atari has been here since day one and will always be here, of that I have no doubt. The only people who can curb piracy is the pirates themselves. Derek fern's threats regarding FAST (issue 60) are laughable because I honestly can't see FAST being bothered with one person pirating software for the Atari 8-bit when they have their eye on a warehouse pirating and selling software as originals. To all true Atari 8-bitters I say this: the software produced and sold nowadays is written by dedicated Atari 8-bitters like yourselves. Do you think it is fair that all their toils should go financially unrewarded because everyone has pirated the software and hardly anyone has bought it? I mean, Atari 8-bit software sales are hardly going to make anyone rich, are they? They write the software out of a love for their computer and, of course, for a bit of money.

I can't understand software producers at all. For example Tiger Developments' disks have no protection at all! Wake up Neil! You are making it so easy for copies to be made and given to friends. Also disks like 'The Last Guardian' and 'Tagalon' - completely unprotected. Any disk copier from the Public Domain would be able to copy them. There is good news though - the European Atarians seem to excel in software protection and disks like the Mega-Mags and 'Operation Blood' have some excellent protection that can't be copied by Happy or Lazer drives. This should certainly stop piracy in its tracks and so is great news.

As a final note I say to all TRUE Atarians: please DO NOT pirate any new software produced - it is not fair on the authors, the publishers and the people who DON'T pirate games!"

Also on the subject of piracy, Stuart Murray who produces FUTURA disk mag made these comments in a recent letter to me:

"I've just had to spend two hours updating FUTURA 4 because 'OMidor' is in fact a German commercial release which was "cracked by (a pirate)". I thought it was PD - written by Peter Sabbath of ABBUC PD - I didn't notice the pirate's message on the title screen. From now on I'll be examining ALL title screens and .DOC files closely. I was planning to include a great game called 'Race' on FUTURA 7 until I noticed the infamous "De-protected by ..." message on the title screen."

Well, we can't change the past, but we can shape the future.

If we want the Atari Classic to survive with new software (albeit in limited volume), we must support the producers of any new software by purchasing originals; don't expect fancy packaging - just good usable software at a reasonable price!

Allan J. Palmer

INDISPENSABLE UTILITIES

Patrice Robert still enjoys playing golf but this issue turns his attention to more serious matters

Have you ever wanted to use some powerful utilities on your 8 bit machine? Yes, of course! But what kind of software? I have often wondered what are the essential utilities on the XL/XE. Some of the programs I have selected really give our computer huge power. A power I never thought was possible to have! Let's discover how great is the world of ATARI, as it relates to utilities, possibly the most interesting pieces of software.

STARTING WITH DOS

As you probably know from the first time you got a disk drive, the most important piece of software is a Disk Operating System to enable you to manipulate disks. For this most important job, the most powerful DOS is, without any contest, **SPARTADOS** from ICD which allows you to format any disk (5 1/4 or 3 1/2 inches) in any density (single, medium, double, double sided double density, hard drive) and also supports high speed transfer, even between disks of different formats (this supposes you have a hardware enhanced drive - Happy, DT duplicator, US doubler etc.).

The other DOS to be recommended is **SUPERDOS 5.0** from Technical Support which was produced in 1988. It does the same work as SPARTADOS, that is to say that it also supports the special XF551 format, but it also includes a special auto-run loader for this special 360K disk drive. According to my knowledge, this is the only software offering this possibility.

COPYING DISKS

After a while, you will realise that you need a disk copier. However, you will notice that most of them don't copy every density or, perhaps, support only one disk drive. According to my experience in this field, I highly recommend **US SECTOR COPY 4** or **MYCOPYR 2.1** (see the PAGE 6 Public Domain Library) which automatically detect the density of the source disk, read and write in high speed if you have a special enhanced drive, and then format the destination drive in the required density. Most important of all, they detect the number of drives that you have and display the progress of the copy on the screen by a moving bar (for US COPY 4) like in those well known ST copiers. As if this wasn't enough, they also use the extra ram that you have up to 256K, so supporting the 130XE ram disk and the Rambo XL. With these copiers you can copy a single disk in one pass with a 130XE in some seconds.

TRANSFERRING TAPES

Looking at your tapes, you will need a tape-disk transfer program. For this job, don't search for weeks and weeks, just buy **TRANSDISK 4** produced in 1988 by Digicom and now available from PAGE 6. I must admit that with this software all the tapes I have tried to duplicate to disk have worked well and every transfer has been successful.

MAKING BOOT DISKS

If you have a large number of files on your disks, you might want to find an easy way to select and autorun your chosen program. I solved the problem in two ways. The first is by using a program called **NDOS AUTORUN** or **NDOS CONVERTER** which enable you to boot every file with a ".com" extender filename. You will probably say that every dedicated autorun can do it but the great advantage of this one is that you can write the whole name of the file, not being obliged to reduce it to 8 characters. In addition the autorun doesn't take up any room on your disk! That means that if your disk is full of files giving you 0 free sectors when asking for a directory, NDOS will still write the autorun on the disk so that the presentation page appears on screen when booting with full names for all games or utilities.

The second utility I often use is called **SPEED START INITIALIZER** version 2 or 3, as it allows you to boot not only ".com" files, but also binary and Basic files and it supports single, medium and also double density disks if you are using an XF551 drive. Moreover, this program can make high speed boot disks if you have an enhanced drive and it also allows a normal drive to boot in high speed provided the autorun has been written by an enhanced drive. Really great!

JUST FOR FUN!

Now, for the fun of it, and because it really needs to be seen on your XL, have a look, or I should rather say have a hear, at **S.A.M** the Software Automatic Mouth from Don't Ask software produced in 1982 which gives a tongue to your computer. I wonder if the people who made SAM could make us a speaking DOS? It would be funny to hear our XL saying "I'm formatting your disk in drive 1", wouldn't it? If you like the synthetic voice, you probably might like to look at a picture and voice digitizer also such as **EASY SCAN 2** from Innovative Concepts in 1989 and **DIGI-VOICE**, the audio processing system, from Gemini software in 1984. If you need to draw some pictures, use **TECHNICOLOUR DREAMS** which was produced in 1986 from Red Rat software. I never saw more beautiful pictures on my XL as this program can produce.

TWO IN ONE?

The following title made me rather sceptical when I heard of it. **SNAPSHOT** gives you the possibility to have two computers in one! I have to give an explanation I suppose. This little program from Tom Hunt offers you the rare satisfaction of configuring your XE or your extended XL in two parts so that you can load two different programs into memory which for this purpose is divided into two parts. The swap between the programs is made by pushing the shift+control+1 key. I couldn't believe it until I saw it!

GETTING MORE SERIOUS

For the more serious work everybody owning a computer must have looked for a word processor. I highly recommend to you, **FIRST XLENT WORD PROCESSOR** as it uses the extra available ram of your XE. However, **ATARIWRITER +** also gives good support as it includes spelling checker, mail-merge database, alphabetise feature, telecommunications and user definable printer drivers. For the all in one package only two have the right to be mentioned here. I speak of **HOME-PAK** from Batteries Included in 1985 which include a word processing program called Hometext, a database called Home-find and a communication program called Hometerm. The other one well known to every interested 8-bit owner is of course **MINI OFFICE 2** from Database software in 1987 (now available from PAGE 6) as it includes word processor, spreadsheet, database, graphics, label printer and communications.

FAREWELL

I hope that this summary of much needed utilities will interest some of the 8-bit readers as it took me years (and money also) to get the most powerful programs for my XL/XE. If you want to speak of your experience with utilities or something else relating to our computer, why not write to me?

Patrice ROBERT, 7, bd Marcel Pourtout, 92500 Rueil Malmaison, FRANCE

DR. WHO ... PAPER PLANES ... UTTER LUNACY!

Welcome to the Classic PD Zone! Within this new column I will take you on a journey through the wonderful world of Atari 8-bit public domain software. As new commercial releases have slowed up, the PD sector has rolled up its sleeves and taken control of the 8-bit software scene. Many of today's PD titles could quite easily have been released commercially. The Classic PD Zone will offer you an insight into this ever-growing world of Atari 8-bit PD software. This time I give you a mixed mag of PD goodies...

THE COMPLETE Dr. Who

If you're a devoted fan of Dr. Who or just an occasional viewer, The Complete Dr. Who will be of interest to you. The current repeats on BBC2 and the video re-release of the entire series has brought Dr. Who back into the public eye. I was a fan of the series and booted this disk with great anticipation. I was not disappointed.

The Complete Dr. Who disk consists of five text files which you can read or print, and an arcade adventure game. You are greeted with a menu offering six options: The Game; Cast and Episodes; Bibliography; Who is Who?; Behind the Scenes; and Knit a Scarf. I decided to leave the game until last as I wanted to create an atmosphere before playing it.

Cast and Episodes gives you a vast amount of information on the actors, script editors and producers of the Dr. Who series as well as a complete listing of all the episodes from the 25 seasons. This brought back many fond memories for me - I'd forgotten all about old K-9. It also reminded me of my favourite episodes: Robots of Death and The Five Doctors.

Within the Bibliography there are details of almost forty Dr. Who books. These are not the books of the series - they are independent Dr. Who related publications. Some of them sound most obscure, e.g. 'The Doctor Who Cookbook' , 'Build the Tardis' and 'The Doctor Who Pattern Book'. (Why was there never an Atari 8-bit cookbook?)

Who is Who? is a very interesting article which attempts to prove that the Doctor and the Master (his enemy) are the same person. It also deals with the complexities of time travel. Although it was a most interesting read, I'm still not convinced that they are the same person. I'll leave you to make up your own mind.

Behind the Scenes is an detailed account of the final Dr. Who season (#25). It gives examples of accidental explosions on the set, changes to the original script and scenes that were cut.

The final text file is Knit a Scarf. You are given full details on how to knit the 1980 Season scarf.

After reading all five text files I was ready to play the game. Dr. Who Adventure is an arcade adventure game written in BASIC (it takes three minutes to initialise). It was featured as the disk bonus on Page 6 issue disk #44. The main menu gives you four options: Scenario; Play the Game; Solution; and Alter Program.

I began by reading the scenario. You play the Doctor himself. You are trapped on the planet Zog because the Master has rendered the Tardis useless by stealing the Time Drive Unit. To escape you must locate the Time Drive Unit within one hour. However, there are many objects to collect and dangers to avoid.

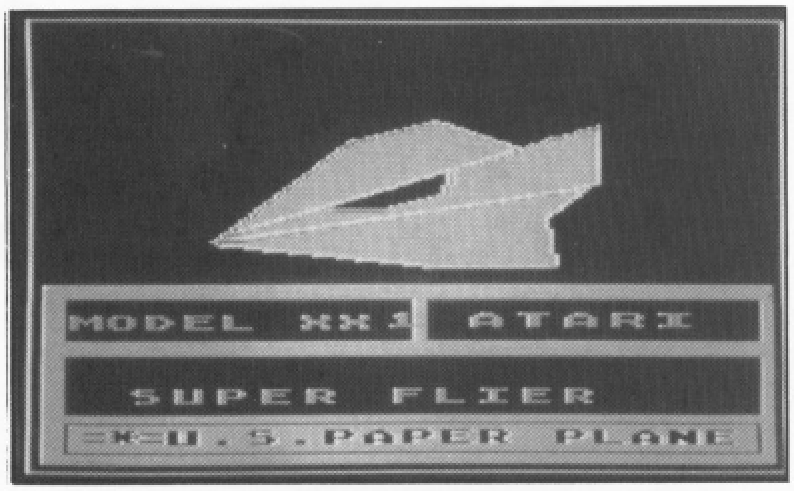
Dr. Who Adventure will certainly not win any awards for graphics. It is typical of many arcade adventures written in BASIC - single colour objects, jerky animation, etc. The sound is also limited to the occasional click or hiss. In fact, I usually don't enjoy this type of game. However, for some reason I quite enjoyed Dr. Who Adventure. I think it was because I'd created a complimentary atmosphere by reading all the text files first. If you give it a chance you'll discover that the actual game content of Dr. Who Adventure is quite detailed and well put together.

If you find Dr. Who Adventure too difficult to complete, there is a full solution included. You can also alter the program if you wish.

Overall, I thoroughly enjoyed The Complete Dr. Who. The text files are extremely interesting and definitely worth the purchase of the disk alone. Dr. Who Adventure is an average arcade adventure which compliments the text. Even with its mediocre graphics and sound I found myself battling through the High Priest's Temple and the Dalek Room attempting to complete the game. However, I feel it might have been a better idea to include a Dr. Who text adventure instead of the arcade version. Even so, I heartily recommend The Complete Doctor Who to all fans of the series.

Classic PD Zone Rating : 75%

U.S. PAPER PLANE
(PAPER AIRPLANE MAKER)



After my Dr. Who session I decided to try something a little different. U.S. Paper Plane helps you to construct paper airplanes. You also need an 80-column printer to print the designs.

There are 5 paper airplane designs on Side A of the disk. After a quick browse through all the designs I decided to construct the XX1 design. After it was loaded from disk and displayed on the screen I pressed 'P' to print it. The XX1 design was successfully dumped to my Citizen 120D+. At this point, it doesn't look anything like an airplane. Next, I pressed 'ESC' to select the folding instructions. This is where everything begins to take shape. You are given full step-by-step instructions on how to fold your chosen design. This is accomplished by a series of graphical representations of each stage of the folding process. The part to be folded is shown on the screen in bright yellow. The process is very simple to follow and before long I had completed my XX1. I found it easier to use staples to hold everything together instead of paper-clips (although a paper-clip is essential for nose weight). After the graphical folding instructions you are given brief text instructions to make sure that you didn't miss anything.

On Side B of the disk you will find another 3 airplane designs and an art program called PolyPaint which is written in BASIC. It features many of the standard art functions (rectangle, circle, etc.) as well as a text function which allows you to place text anywhere on the screen. With PolyPaint you can design your own paper airplanes. My engineering skills did not stretch to a full design but I did enjoy experimenting with PolyPaint.

To sum up, U.S. Paper Plane is a gem of a program. It is very simple to use and produces excellent results. My XX1 hangs from the shelf above my computer desk and attracts the attention of everyone who enters the room. "But does it fly?", I hear you ask. It goes like a dream!

Classic PD Zone Rating : 85%

LUNACY

Now it's time for some serious fun. Lunacy is a clone of the game Tetris. For those who haven't heard of Tetris, I'll give a brief description of the gameplay. You control various shapes which fall from the top of the screen. You must fit these shapes together at the bottom to create complete horizontal lines. After completing a line it will disappear and the remaining shapes fall by one line. The game ends when you no longer have space for new shapes.

The Atari Classic has a wealth of PD Tetris clones. These include Tetrix, Atartris, Fortress, etc. The first one I played was Hot Blocks (Page 6 issue disk #46). So what makes Lunacy stand out from the rest? Let's take a look...

When you boot Lunacy you are greeted with the following message: "Surgeon General's Warning: Extensive Research Has Consistently Proven That Playing Lunacy Will Result In Addiction". A nice touch. Next, you are asked to select between three different background tunes. All three are quite good. You are then greeted by the main menu. Here you can select the starting level and line (the higher the line the less space for pieces). Press fire and you're off.

In the middle of the screen there is a large black rectangle - this is the main play area within which you must fit all the pieces. To the top-left you are shown the next piece and at the bottom your score and number of lines completed.

As with all Tetris clones, the gameplay is extremely addictive. It is one of those "just one more go" games. Control over the pieces in Lunacy is excellent (this is important on later levels). The graphics are very colourful with each piece having its own colour combination. The sound consists entirely of the background tune and this can be switched off and on by pressing 'S'.

I found Lunacy to be an excellent implementation of Tetris. In fact, it is probably my favourite (along with Tetrix). I really enjoyed all the little extras such as the boot-up message, selectable background music, highscore table and the way the lines disappear to the side during gameplay. You can also create your own background music if you own Pokey Player II. In fact, Lunacy could quite easily have been commercially released.

Classic PD Zone Rating : 80%

See-ya!

Well, we've reached the end of our first trip into the world of Atari 8-bit public domain. Programs such as those mentioned above show the power of the Atari Classic. Next time, I'll be reviewing another mixed bag of PD goodies, including Pixel Artist Deluxe. The Atari Classic goes marching on!

This issues reviews are

DS#26 - PAPER AIRPLANE MAKER
DISK #178 - THE COMPLETE DR. WHO
DISK #179 - LUNACY

with Stuart Murray as your guide

Some Basic Notes on ... GRAPHICS

Ann O'Driscoll continues her guide to the various graphics modes so you can begin to write your own programs

DRAWING IN GRAPHICS 3 TO 7

The listing here is a simple program used to show what Graphics 3 to 7 are all about. These are the drawing or "map" modes: If you try to print a letter on one of these screens you'll produce a coloured square instead, with the size of the square dependant on the mode you are in.

AVAILABLE COLOURS

In Graphics 3 to 7, the COLOR command is used to pick the colour register. Register 4 (memory location 712) is used for the background and register 0 (memory location 708) is used for the points or lines. Graphics modes 3, 5 and 7 also usé registers 1 and 2 (memory locations 709 and 710 respectively) for drawing, but none of the modes use register 3. Table 1 shows the relationship between color command numbers, registers and graphics modes. For example, the command COLOR 2 picks register number 1 at location 709. This register is used in Graphics 3, 5 and 7 bŭt not in Graphics 4 or 6.

As is the case with the text modes, we use SETCOLOR or POKE to change a colour in a register from its default value. These commands take the form SETCOLOR n,C,L where "n" is the register number, "C" is the colour you want (0-15) and "L" is your chosen luminance (0-14; even numbers) or POKE m,(16*C)+L where "C" and "L" are colour and luminance values as before, "m" is the memory location and 16 is a fixed number.

TABLE 1
COLOUR COMMANDS AND REGISTERS IN GRAPHICS 3 TO 7

COLOR	REGISTER	LOCATION	GRAPHICS NO
1	0	(708)	3,4,5,6 and 7
2	1	(709)	3,5 and 7
3	2	(710)	3,5 and 7
0	4	(712)	3,4,5,6 and 7

SCREEN RESOLUTION

Apart from the colour differences, Graphics 3 to 7 also vary with respect to the size of the individual blocks or "pixels" which may be printed on the screen. These range from the low resolution "chunky" Graphics 3 screen (40 pixels across by up to 24 pixels down) to the much finer Graphics 7 screen (160 across by up to 96 down). The details are given in Table 2. Basically, a Graphics 3 pixel is the same size as a Graphics 0 text character, being 8 bits wide by 8 scan lines high; Graphics 4 and 5 pixels are half that size (4 X 4) while Graphics 6 and 7 pixels are half this amount again (2 X 2).

THE PROGRAM

The listing lets you draw in the graphics modes with a joystick in port 1. There's also a "demo" option which draws a pattern in a selected mode.

LINE 45 of the listing asks you to choose between Graphics 3, 5 and 7: There was no need to include modes 4 and 6 because, as you can see from Tables 1 and 2, these are simply less colourful versions of Graphics 5 and 7 respectively. The maximum horizontal (XMAX) and vertical (YMAX) screen co-ordinates, which are dependant on the graphics mode, are then worked out (**LINES 60-70**).

The "see a pattern" routine begins at **LINE 300**. This simply draws lines from each of the 4 corners to the opposite end of the screen. The space between the lines is set by the size of the

```
EI 1 REM ********************************
QC 2 REM *     GRAPHICS 3 TO 7 DEMO      *
MF 3 REM *       by Ann O'Driscoll       *
EB 4 REM * ----------------------------- *
MP 5 REM *  NEW ATARI USER - JUN 1993    *
EN 6 REM ********************************
NM 7 REM
TL 30 GRAPHICS 0:POSITION 10,0:? "GRAPHIC
   S 3 TO 7 DEMO":POSITION 10,1:? "________
   ____________________"
OF 40 CLOSE #1:OPEN #1,4,0,"K:"
CQ 45 POSITION 2,5:? "WHICH GRAPHICS MODE
    [3, 5 or 7]? ";
UY 50 GET #1,KEY:G=KEY-48:IF G<>3 AND G<>
   5 AND G<>7 THEN 45
DH 60 IF G=3 THEN XMAX=39:YMAX=19
JV 65 IF G=5 THEN XMAX=79:YMAX=39
ZZ 70 IF G=7 THEN XMAX=159:YMAX=79
MX 85 POSITION 2,8:? "1 = SEE A PATTERN":
   ? "2 = DRAW YOUR OWN":? :? "PRESS 1 OR
    2 ";
WZ 90 GET #1,KEY:K=KEY-48:IF K<>1 AND K<>
   2 THEN 85
UT 100 IF K=2 THEN 400
UY 299 REM  SCREEN PATTERN    300 - 390 
HE 300 GRAPHICS G:POKE 752,1:C=1
CM 320 FOR N=0 TO XMAX STEP 1.5
VF 330 COLOR INT(RND(0)*3+1)
HQ 340 PLOT 0,0:DRAWTO N,YMAX
YQ 345 PLOT XMAX,0:DRAWTO XMAX-N,YMAX
CS 350 PLOT 0,YMAX:DRAWTO N,0
JM 355 PLOT XMAX,YMAX:DRAWTO XMAX-N,0
ID 360 NEXT N
SX 370 ? CHR$(125);"↓→PRESS Q TO QUIT"
RE 380 IF PEEK(764)<>47 THEN 380
NY 390 GOTO 600
DF 399 REM  DRAWING PROGRAM  400 - 480 
HF 400 GRAPHICS G:POKE 752,1:C=1
SN 405 ? CHR$(125);" OPTION: ORANGE  SEL
   ECT: GREEN":? :? " START: BLUE  FIRE:
    ERASE  Q: QUIT"
WX 410 IF PEEK(764)=47 THEN 600
RF 415 P=PEEK(53279)
QM 420 IF P=3 THEN C=1
SF 422 IF P=5 THEN C=2
TO 424 IF P=6 THEN C=3
CT 430 COLOR C:PLOT X,Y
FP 450 IF STRIG(0)=0 THEN COLOR 0:PLOT X,
   Y
IR 455 S=STICK(0)
VP 460 X=X+(S<8 AND X<XMAX)-(S>8 AND S<12
    AND X>0)
LC 470 Y=Y+((S=5 OR S=9 OR S=13) AND Y<YM
   AX)-((S=6 OR S=10 OR S=14) AND Y>0)
NO 480 GOTO 410
PF 599 REM  END PROGRAM  600 
TE 600 GRAPHICS 0:POKE 752,0:POKE 764,255
   :END
```

step in the FOR NEXT loop (**LINE 320**) - increase the number here to get wider gaps. The line colour for each round of the loop uses register 0 (COLOR 1), register 1 (COLOR 2) or register 2 (COLOR 3). This is determined randomly by LINE 330. The routine highlights the resolution differences between the screen types:- Compare the GR.7 "lace" effect with the GR.3 pattern to see this.

The "draw your own pattern" routine starts at **LINE 400**. The default drawing colour uses register 0 (COLOR C; C=1 in LINE 400), but you can change this with the console keys:- "Option" selects COLOR 1 or register 0 (**LINE 420**), "Select" gives you COLOR 2 or register 1 (**LINE 422**) and "Start" gives you COLOR 3 or register 2 (**LINE 424**). Pressing the joystick fire button selects COLOR 0 or register 4:- This is the background colour so you can use it to rub things out or move to a new screen area without drawing (**LINE 450**).

The first time the program is run, **LINE 430** plots a point in the top left of the screen as X=0 and Y=0 are the default values. The joystick movement routine updates the screen co-ordinates before subsequent points are plotted: The function STICK(0) returns particular values depending on the direction in which the (port 1) joystick is pushed; the details are given in Figure 1.

For example, it can be seen that rightward movements give values of 5, 6 or 7 while leftward movements return values of 9, 10 or 11. **LINE 460** of the program adds 1 to the X value for a "right" movement (provided X is not at its maximum level) and subtracts 1 from the X value for a "left" movement (provided X is not zero). **LINE 470** deals with the vertical Y values in the same way.

After each point is plotted, the program goes back to LINE 410 to see if you want to quit before repeating the colour selection and drawing process.

GRAPHICS 8 OVERLEAF ☞

TABLE 2
SCREEN RESOLUTION IN GRAPHICS 3 TO 7

GRAPHICS	PIXEL SIZE BITS x SCAN LINES	PIXELS/SCREEN FULL(WINDOW)
3	8 X 8	40 X 24(20)
4,5	4 X 4	80 X 48(40)
6,7	2 X 2	160 X 96(80)

FULL SCREEN LENGTH = 192 SCAN LINES
FULL SCREEN WIDTH = 160 COLOUR CLOCKS
= 320 BITS

FIG. 1: Values returned by STICK(0) when the port 1 joystick is pushed in the direction shown

```
                 14

        10                  6

   11       ----15----           7

         9                  5

                 13
```

```
EI 1 REM ********************************
KK 2 REM *  GRAPHICS 8 BAR CHART DEMO   *
MF 3 REM *       by Ann O'Driscoll      *
EB 4 REM * ---------------------------- *
MP 5 REM *  NEW ATARI USER - JUN 1993   *
EN 6 REM ********************************
NM 7 REM
ZV 110 L=5:D=8:DIM A$(20),BL$(39),AL$(D),
   P$(L),T$(D*L),NUM(D),SUM(D)
AK 115 BL$(1)=" ":BL$(39)=" ":BL$(2)=BL$:
   AL$="ABCDEFGHIJ"
HC 120 BL=310:CL=320:AX=330:TXT=600:CLOSE
    #3:OPEN #3,4,0,"K:":DAT=0:Y=20
KA 199 REM  MENU SCREEN   200 - 250
IS 200 GRAPHICS 0:POKE 710,0:POKE 712,0:P
   OKE 752,1
WD 210 ? "GRAPHICS 8 BAR CHART":? "_______
   ___________________"
DO 220 RESTORE 230:FOR N=1 TO 4:READ A$:P
   OSITION 2,2+N*3:? N;":- ";A$:NEXT N
BO 225 GOSUB BL:? "Press a number 1 - 4"
QS 230 DATA USE YOUR OWN DATA,USE THE DEM
   O DATA,SEE THE BAR CHART,QUIT THE PROG
   RAM
PF 240 GET #3,K:K=K-48:IF K<1 OR K>4 THEN
    240
QQ 245 IF DAT=0 AND K=3 THEN K=2
TD 250 GOTO K*1000
EZ 310 POSITION 2,Y:? BL$;BL$:POSITION 2,
   Y:RETURN :REM  BLANK LINES
JG 320 FOR N=1 TO D:NUM(N)=0:NEXT N:T$(1)
   =" ":T$(D*L)=" ":T$(2)=T$:RETURN :REM
    CLEAR ARRAYS
QG 330 PLOT 18,YY:DRAWTO 22,YY:P$=STR$(Y1
   ):GOSUB TXT:Y1=Y1-Y3:RETURN :REM  Y AX
   IS NUMBERS
DH 600 ST=SC+(YY*40)+XX:FOR M=1 TO LEN(P$
   )
NC 610 C=ASC(P$(M,M)):IF C>127 THEN C=C-1
   28
DK 620 IF C>31 AND C<96 THEN C=C-32:GOTO
   630
ND 625 IF C<32 THEN C=C+64
WN 630 CH=57344+C*8:FOR B=0 TO 7:POKE ST+
   B*40,PEEK(CH+B):NEXT B:ST=ST+1:NEXT M:
   RETURN :REM  TEXT ON GR.8 SCREEN
RM 990 REM
KB 999 REM  INPUT PARAMETERS 1000-1050
AM 1000 TRAP 1000:GOSUB BL:? "How many it
   ems [2 - 8] ";:INPUT X:IF X<2 OR X>D T
   HEN 1000
EI 1020 GOSUB CL:FOR N=1 TO X:GOSUB BL
GS 1030 ? "Input value #";N;" ";:INPUT #1
   6;V:NUM(N)=V
UI 1040 ? "Input label for #";N;" ";:INPU
   T #16;P$:T$(1+(N-1)*L,N*L)=P$
ZZ 1050 NEXT N:DAT=1:GOTO 3000
UB 1999 REM  USE DEMO DATA    2000-2020
RW 2000 GOSUB CL:RESTORE 2020:X=8:FOR N=1
    TO X:READ V,P$:NUM(N)=V:T$(1+(N-1)*L,
   N*L)=P$:NEXT N
CZ 2020 DATA 12,ONE,6,TWO,8,THREE,2,FOUR,
   11,FIVE,9,SIX,4,SEVEN,3,EIGHT
AE 2999 REM  BAR GRAPH   3000 - 3400
AC 3000 GRAPHICS 8:SC=PEEK(88)+256*PEEK(8
   9):POKE 710,0:POKE 752,1:COLOR 1:XMAX=
   250:YMAX=150
KW 3010 PLOT 20,0:DRAWTO 20,YMAX:Y1=1:FOR
    N=1 TO X:IF NUM(N)>Y1 THEN Y1=NUM(N)
HA 3020 NEXT N
QJ 3030 Y2=Y1:Y3=Y1/4:XX=0:YY=0:GOSUB AX:
   YY=37:GOSUB AX:YY=75:GOSUB AX:YY=112:G
   OSUB AX
KN 3060 S=YMAX/Y2:FOR N=1 TO X:SUM(N)=NUM
   (N)*S:NEXT N
CU 3070 PLOT 20,YMAX:DRAWTO XMAX,YMAX:X1=
   32:X2=12
XC 3200 FOR N=1 TO X
HO 3210 FOR NN=0 TO X2:PLOT (N-1)*X1+24+N
   N,YMAX:DRAWTO (N-1)*X1+24+NN,YMAX-SUM(
   N):NEXT NN
DH 3215 XX=((N-1)*X1+24)/8:YY=YMAX+3:P$=A
   L$(N,N):GOSUB TXT
HE 3220 NEXT N
MR 3300 YY=0:FOR N=1 TO X
RQ 3310 XX=32:P$=AL$(N,N):GOSUB TXT:XX=34
   :P$=T$(1+(N-1)*L,N*L):GOSUB TXT:YY=YY+
   12
HG 3320 NEXT N
KU 3400 ? CHR$(125);"↓▶Press a key for th
   e menu":GET #3,K:GOTO 200
QX 3999 REM  QUIT PROGRAM   4000 - 4030
YR 4000 POSITION 2,Y:? "Sure you want to
   quit? [Y/N]"
OH 4010 GET #3,K:IF K<>78 AND K<>89 THEN
   4010
LH 4020 IF K=78 THEN 225
BN 4030 GRAPHICS 0:POKE 752,0:END
```

BAR CHARTS IN GRAPHICS 8

Graphics 8 is a high resolution screen in which each graphics block or pixel corresponds to 1 bit. The screen can fit 320 pixels across and up to 192 pixels down (160 with a text window). Graphics 8 is like Graphics 0 in that it has a border, a background and pixels which are the same colour but a different brightness to the background. The mode uses 3 colour registers:

Register 1 - *character brightness*
- *memory location 709*
- *COLOR 1*

Register 2 - *background/screen colour*
- *memory location 710*
- *COLOR 2*

Register 4 - *border colour*
- *memory location 712*

You POKE a value into location 712 or use SETCOLOR 4,C,L to change the border colour; POKE location 710 or use SETCOLOR 2,C,L to change the screen colour, where "C" and "L" are colour and luminance values. The foreground or pixel colour is not selectable - you just get the background in a different shade. In Graphics 8, COLOR 1 before a PLOT/DRAWTO statement is used to select register 1 (i.e. prints in the foreground color) while COLOR 2 picks register 2 (i.e. prints in the background colour to make the points invisible).

THE PROGRAM

Graphics 8 is often selected for listings which use graphs or pie charts because, as well as having a high enough resolution to produce a lot of detail, it is very easy to print text on the screen in this mode (because GR.8 is exactly 8 times finer than GR.0). The program shown here is a simple demonstration of how to produce a bar chart in Graphics 8. You may either input your own data (option 1 on the menu) or use the "demo"

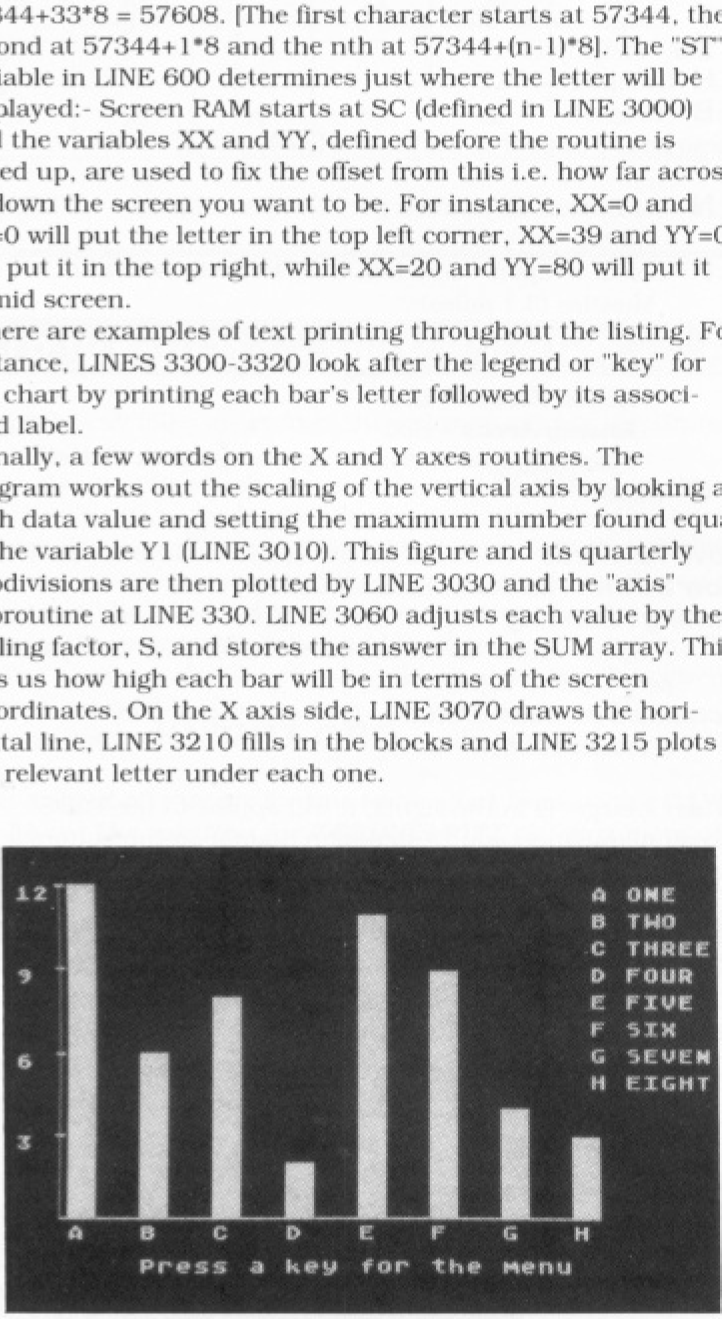
data provided in the program (menu option 2). The listing can cope with up to 8 separate items (D=8 in LINE 110) and each item can have a name or label up to 5 characters long (L=5 in LINE 110). The vertical or Y axis co-ordinates are determined by the values of the variables used and scaling is done automatically. A letter is printed under each bar and the details (i.e. associated item labels) are then given in a key at the right hand side of the screen.

The main point of interest of the program from a Graphics 8 viewpoint is the text printing subroutine at LINES 600-630. The routine looks in turn at each character in the string to be printed (P$), gets its ASCII value and converts it to a non inverse character if necessary (LINE 610; C>127 means its inverse). Next it looks to see where the character is located in ROM, takes the 8 bytes which represent the letter and POKEs these into screen RAM using a FOR NEXT loop. In this way we can reproduce each character one line at a time.

For example, to put an "A" on the screen, LINE 610 tells us that C=65 (The ASCII code for "A"), LINE 620 tells us to subtract 32 from this (C=33) to get the ROM position of this particular character and LINE 630 tells us that the 8 bytes which define the letter "A" start at memory location 57344+33*8 = 57608. [The first character starts at 57344, the second at 57344+1*8 and the nth at 57344+(n-1)*8]. The "ST" variable in LINE 600 determines just where the letter will be displayed:- Screen RAM starts at SC (defined in LINE 3000) and the variables XX and YY, defined before the routine is called up, are used to fix the offset from this i.e. how far across or down the screen you want to be. For instance, XX=0 and YY=0 will put the letter in the top left corner, XX=39 and YY=0 will put it in the top right, while XX=20 and YY=80 will put it in mid screen.

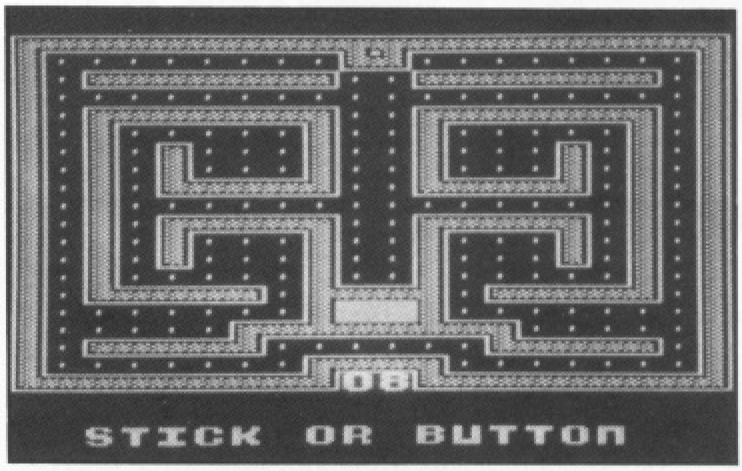
There are examples of text printing throughout the listing. For instance, LINES 3300-3320 look after the legend or "key" for the chart by printing each bar's letter followed by its associated label.

Finally, a few words on the X and Y axes routines. The program works out the scaling of the vertical axis by looking at each data value and setting the maximum number found equal to the variable Y1 (LINE 3010). This figure and its quarterly subdivisions are then plotted by LINE 3030 and the "axis" subroutine at LINE 330. LINE 3060 adjusts each value by the scaling factor, S, and stores the answer in the SUM array. This tells us how high each bar will be in terms of the screen co-ordinates. On the X axis side, LINE 3070 draws the horizontal line, LINE 3210 fills in the blocks and LINE 3215 plots the relevant letter under each one.



DISK BONUS

GOLD GRABBER



by
Derrick Summers

Gold Grabber is a multi-screen maze game in which the object is to collect an ever increasing number of gold bars through ever more complex mazes. There are 45 levels supplied but others can be added with the editor and complete records of your progress through the various levels can be saved to disk.

There are two versions of the game with the second being more difficult as grey rocks appear at random to block your path and for every rock that you go through you have to collect an extra Gold Bar to complete the level. These rocks usually disappear when you hit them but on odd occasions they remain in position which can cause problems if you have to come back the same way.

In both games, if you hit a guard you may be lucky and escape but don't press your luck, next time could be fatal. Even if you escape, the image that is left behind could trap you in a section where there are no gold bars so escaping will not do you any good. There are also two editors and the difference between them is that in the second you can play test a level with grey rocks blocking your path.

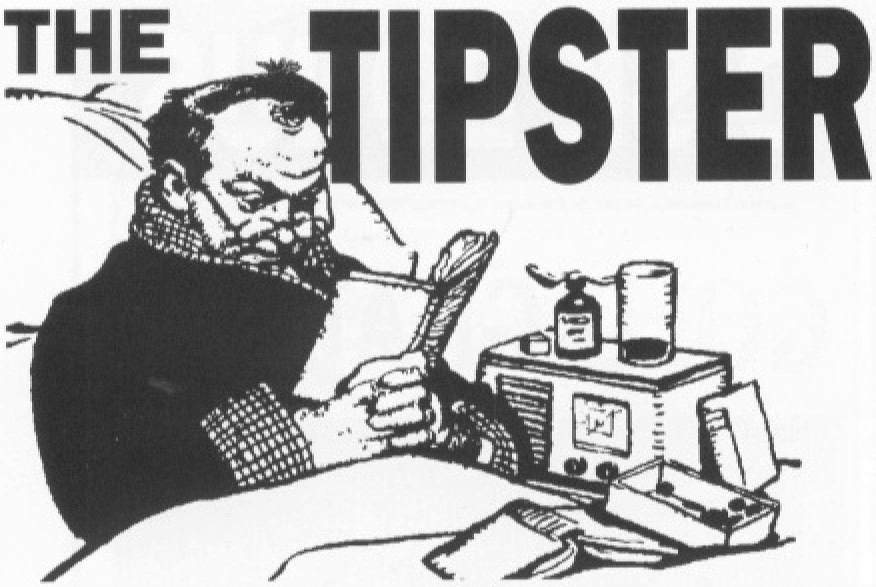
All aspects of the game are covered in the instruction file on the disk and some details are also given on how you might adapt particular parts of the program to your preferences. At the end of a game you are given the chance of entering your scores on the High Scores Chart which will sort them in order as they are entered.

In addition to the High Score chart there is a 'lost life' chart that tells you which screens have been played and where you lost your lives. With this program you have a choice of recording only the last game played or you can record every game played by removing the REM in line 1580. If you wish to make a fresh start just delete the .DAT files from the disk and the program will create new files as you play.

There are several more aspects to the game which are more fully covered in the instruction file and Gold Grabber should prove to be quite a challenge for anyone to complete in full.

GOLD GRABBER is the BONUS on the Issue 62 disk which also contains all of the programs from this issue ready to run. Disk subscribers will receive their disk with their magazine but the disk is available separately for just £2.95. Write to PAGE 6, P.O. Box 54, Stafford, ST16 1TB enclosing your cheque, postal order or credit card details or order by telephone on 0785 213928 using Visa, Mastercard or Switch.

THE TIPSTER



Would you believe that The Tipster doesn't really know everything and in fact goes to University? Well, University is getting on top of me once again as its time for the exams once again (I thought I left those behind at school?), but enough of this irrelevant tittle tattle and on with the good stuff once again. It's going to have to be a short Tipster this time around because the tips are very thin on the ground at the moment, something to do with the recession or something like that. (Always best to blame someone or something else!). Only one map to come to this issue and that's Word Maze. O.K. lets go and see what little the Tipster has for you. It maybe little but remember its of the highest quality !

From one of the stalwarts of this column comes the following gathering of tips. Kevin Cooke has come up trumps again with most of the tips on this page

TRANSITION from the issue-disk 55 needs only a few moves to win so here they are:-
4, 6, 7, 5, 3, 2, 4, 6, 8, 9, 7, 5, 3, 1, 2, 4, 6, 8, 7, 5, 3, 4, 6, 5.

ARCHON

Below is a list of all the characters in **ARCHON** and the opponents that they are best used on:

LIGHT SIDE CHARACTERS

Knight : *Best used on Goblins*
Archer : *Best to be used on Goblins, and Manticores*
Valkyrie : *A good one to kill Goblins and Manticores with*
Golem : *Best used to fight Trolls*
Unicorn : *Use against the Basilisk, Dragon and the Sorceress*
Djini : *Best used against the Dragon and weaker creatures*
Phoenix : *Good to kill all of the Goblins with*
Wizard : *Can be used against all of the dark side characters*

DARK SIDE CHARACTERS

Goblin : *Best used against Knights*
Manticore : *Best used on Goblins and Archers*
Banshee : *A good character to kill Knights with*
Troll : *Good to fight Golems with*
Basilisk : *Use to fight the Unicorns and weaker creatures*
Dragon : *Good to use against the Djini*
Shape shifter : *Use against more powerful creatures*
Sorceress : *Can be used against all light side characters*

GATHERING TIPS IN MAY

(well June then)

TOMAHAWK

If you think of yourself as another Tom Cruise in Top Gun or Nicholas Cage in Wings of the Apache then you probably won't want to find out how to get better at Tomahawk. For the rest of you Jon Goldsby has spent a long time playing this simulation so, to start off with, here are a few of the more important keys.

C - Doppler mode
T - Target (tank - field gun) - activates the weapons
SS - Helicopter
H - Helipad
B - Beacon
(these letters appear in the bottom left corner of the radar)

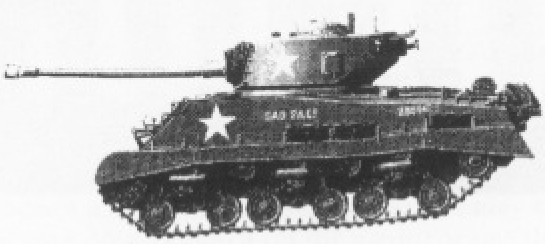
N - (or button on joystick port 1) - Next objective - T0, T1, H3 etc.
P - Select weapon - Gun (2000 ft), Rockets (4000 ft), Missiles (3.1 miles)
M - Map - Selecting map on helipad lets you move between sectors.
Allied Forces = Blue
Enemy Areas = Red
Flashing Red & Blue = opposing forces in same area
H - pause

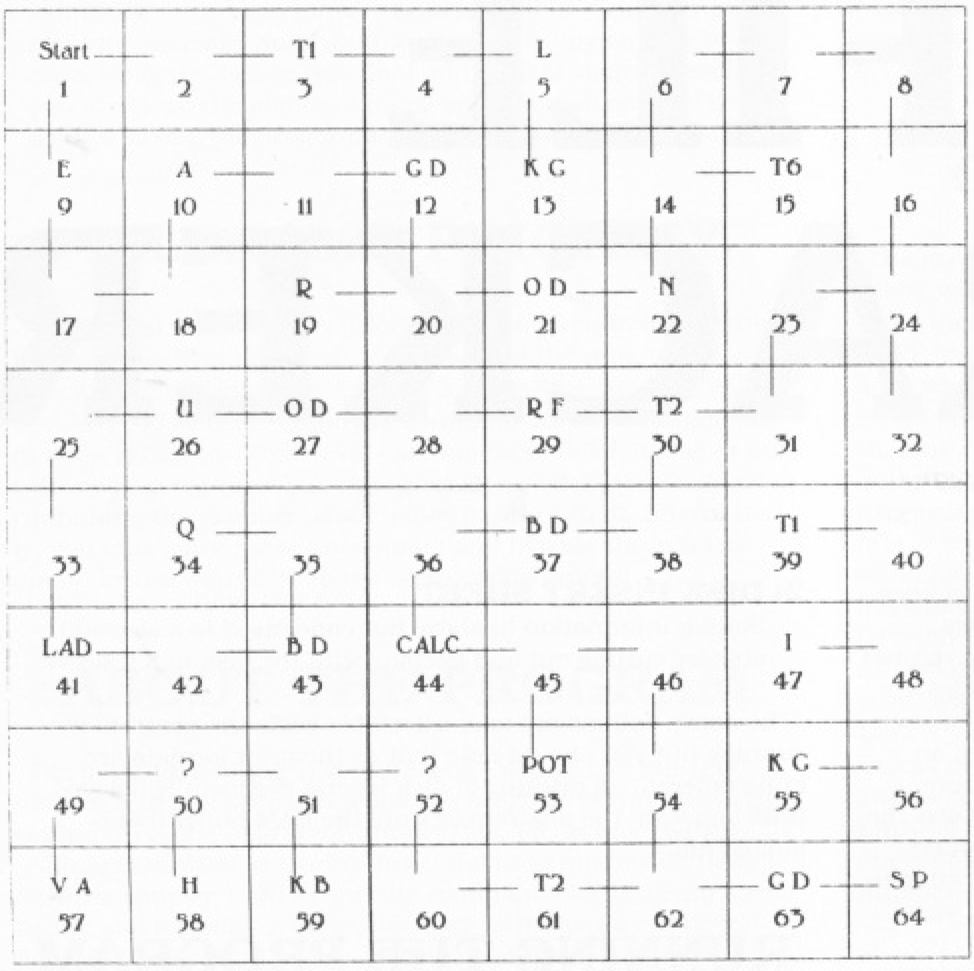
Move Forwards - Push Forwards on Cyclic (Joystick port 1)
Slow Down - Pull Backwards on Cyclic
Turning / Banking - (Speed over 60 Knts) use cyclic (left right)
- (Speed under 60 Knts) use rudder (Z / X) or joystick port 1 (left / right)
Increase/Decrease altitude - Q/A or joystick port 1 (Forwards/backwards)

When a target is in the sights, it will appear in the TADS (Target Acquisition and Designation Sights) on the bottom left corner of the screen.
Red = Hostile
Blue = Friendly

Guns and Rockets must be manually aimed. The missiles will remain locked onto the target when it enters the sights.

- Tanks cannot be destroyed by the gun.





WORD MAZE

The Map
From Issue 47

Mapped by
Timothy Ashley

RF = ROCKFALL
GD = GREEN DOOR
BD = BLUE DOOR
KG = GREEN DOOR KEY
KB = BLUE DOOR KEY
CALC = CALCULATOR
TO = TORCH
POT = POTION
H. A. R. L. E. Q. U. I. N
= ANAGRAM WORD
VA = VASE
T1 = TELEPORT 1
? = WALL

HELP WANTED --- HELP WANTED --- HELP WANTED ---

Well that's all folks apart from the welcome cries of help from those people out there who need help with their games.

Kevin Grant of Barcombe needs help with **ZORK 1** in the underground empire. He wants to know how to get to the land of the dead to collect the Crystal Skull. Also he wants to know to get from Reservoir South to the trunk of Jewels. At the start he would also like to know how to get to the strange passage and finally at the start how do you open the grating. Not to much to ask for is it? No? Good because it's up to you now.

Other lost souls are Michelle and Lisa Trinder of Swindon. They are stuck at the bank for an account number, also directions to the treasure which is given on the parchment, (cross between two trees).

Also any tips on **KNIGHT ORC** would be greatly appreciated (anyone got a map?)

That's about all there is for this issue apart from saying ***DAVE. W of Birmingham, PLEASE can I have the solution for KORONIS RIFT*** as I've run out of solutions to print and I need some to fill up the column.

FREE CASSETTES!

If your hint, tip or map is used by The Tipster you can claim a FREE CASSETTE (from those currently available from The Accessory Shop) but you won't get one if you don't send something to The Tipster - get tipping now!

HOW TO CLAIM

If you see your name in this column just drop us a line and say 'My name is ..... and I claim my free Tipster cassette' and simply tell us which cassette you would like (give an alternative just in case). We will whip it off to you poste haste (or straight away). If you prefer you can always give us a ring instead on the usual number

QUICK ... E's ...QUICK ... E's ...QUICK ... E's

If you put a weight on the space bar, everything in **DAWN RAIDER** slows down and makes play easier. Thanks to Richard Millan for that tip.

If you turn quickly twice then you'll confuse your opponent in **INTERNATIONAL KARATE**. This time its Steve Hargreaves you have to thank for that one.

David Ellis says that in 2 player mode the other player cannot accelerate or decelerate when you are doing the same in **MIG ALLEY ACE**.

All that's left for me to say is that the address is as normal and everything sent will get into the magazine sometime. Write to

The Tipster
Page 6 Publishing
P.O. BOX 54
Stafford
ST16 1DR

COME ON TIPPERS - THE CUPBOARD IS NEARLY BARE

DISKFILE TRACKER

Most disk users will appreciate the importance of keeping accurate and up to date records of disk files. However, it is often tempting not to keep such records in the (mistaken) belief that you will remember which files are on which disks. This is fine for a couple of days or maybe even a week or two but what happens when you have worked on other projects in the meantime and then wish to find a previously saved file? What disk was that file on and what was the actual filename? Load a disk, scan the directory; no, not on that disk. Try another disk and so on and so on. Frustrating to say the least.

Of course, no program can automatically keep disk file records for you but the use of a suitable program can considerably reduce the time and effort required making the task very much easier.

THE SOLUTION

Unable to find a program which was sufficiently flexible and would produce printed output in the form I required I set about writing one to help in this respect. The result of my endeavour is presented here.

By now you may be thinking "Oh no, yet another disk directory program". If so, well you're partly right but I believe the solution presented here offers more than most.

PROGRAM OUTLINE

The main purpose of the program is to produce printouts of disk directories together with disk identifier information in either or both of two formats as follows.

1) DIRECTORY CATALOGUE SHEET
A listing of all filenames on a disk using 80 column print width on A4 paper and,

A Turbo Basic program

by D.T. Pinkney

2) DISK INSERT SHEET
Similar information to above but condensed to a size suitable for cutting out and keeping with the disk in it's sleeve.

The above options are user selectable while the program is running but you should note that as the print formats are quite different all printing of disk inserts is generally delayed until you 'exit' the program or until the RAM buffer (F$) is almost full.

RUNNING THE PROGRAM

Type in the program (listing 1) using TYPO III for error checking. Don't forget to save a copy or two to disk before Running just in case you have made any undetected mistakes.

When Run the program gives all necessary prompts and operates as follows.

1.0) Load directory from the disk in drive No.1 into a long string. The main file string (F$) is dimensioned to 15000 in line 16100 and so has enough room for 13 disks each containing the maximum of 64 files. However, the RAM buffer should hold more like 20 to 30 average disk directories. To prevent this limit being exceeded, each time the file string pointer (BP) is updated line 500 checks to see if it has exceeded a safe limit of 13900. If so, the printing of disk inserts is forced and the filestring pointer is reset.

2.0) If required, sort disk filenames giving priority to any predefined files - see below.

3.0) If required, sort filenames into alphabetic order (omitting any predefined names as in 2.0)

4.0) Display main menu giving the following options -

4.1) Display the current disk directory on screen.

4.2) Produce a disk catalogue or insert sheet from the current disk directory. If this option is chosen, the program will ask for a disk number (1 to 999), disk side (A or B) and a disk title (1 to 44 alphanumeric characters). All this information will be printed on the appropriate sheet(s).

If a disk insert sheet is required the string file pointers are updated so preserving the current disk directory information for later printing. It should be noted that if an insert sheet is NOT required, the file string pointers are not updated causing the current disk directory information to be overwritten by the next disk to be loaded. This prevents unnecessary use of memory.

4.3) Exit the program. (Use of this option will cause any as yet unprinted disk inserts to be output.)

When you have finished using the program you should leave it by using this option. Doing so will check that all disk insert

sheets have been printed.
One word of warning! When you reach the final screen of the exit routine the program all variables will be cleared from memory, so make sure you have a saved copy on disk or tape. However, before this final and critical stage is reached, you are given the choice of doing another disk as a safeguard against losing the program in a moment of thoughtlessness.

FILENAME PRIORITY

As outlined in 2.0 above, priority may be given to any particular filenames you may wish. As presented the program gives priority to four filenames: DOS.SYS, DUP.SYS, AUTORUN.SYS and AUTORUN.BAS. These are contained as Data statements in lines 17520 to 17550. You can amend or delete these or add your own as required but you must also change the Data value containing the number of such files in line 17510. Alternatively, you may leave these lines intact and bypass the 'priority' option by answering 'N' to the appropriate prompt.

ABOUT THE PROGRAM

The program (Listing 1) is quite long - about 16K but this increases to just over 31K when the program is run due to the setting up of the disk record buffer/file, F$, in line 16100.
Although written in 'Turbo Basic' the program mostly uses only the simpler TURBO specific commands for program structuring and legibility / understanding so it should not be too difficult to convert it to any other type of Basic language.
The program has been developed and tested using an Atari 800XL, 1050 disk drive and Star LC10 printer but should work satisfactorily on any similar system including the old type 400/800's subject to the memory and language restrictions.
By keeping track of the number of lines printed the program is able to correctly control the printer in respect of page length and form feeds. Since my own preference is for A4 paper, the appropriate program variable is preset for this size (page length is controlled by variable MLPP which may altered before the program is Run - see later).
The Break key is disabled and, except as a last resort, the Reset key should not be used since although this will cause the program to stop and the computer to reset without loss of the program it will be very difficult to recover any unprinted information held in the RAM buffer.
It should be understood that the actual directory information on the disk is not changed in any way. All the storing and sorting of information is done in the computer's memory so there is no chance of corrupting any programs or files on disk by using this program.
The program is written in modular form using Procedures (Subroutines) to do specific tasks. This should make it fairly easy to follow and modify to suit your own requirements. Additionally, I have tried to make the program as user friendly and comprehensive / flexible as reasonably possible. You will be prompted to input information when required: hopefully all input is fully error trapped and where necessary notified by specific error messages or the screen flashing red. Generally all commands are presented as options and require only one keystroke (no need to press Return).

PROGRAMMING NOTES

To save memory the use of REM statements has been kept to a minimum but this is partly compensated for by the use of variable and procedure names etc. which have some resemblance to their purpose. Additionally, where numerical constants are used fairly often, these have been replaced with self explanatory variables having the constants assigned to them. Hence variables N0,N1,N2 etc. have the same meaning as constants 0,1,2 etc.

CHANGING OUTPUT

The general format and style of the printed output is controlled by variables. These may be altered to suit yourself and are listed together with their location and rules below.
MLPP (line 16410) Should contain the maximum number of lines which could be printed on the paper being used: set to 70 for A4 or 66 for 9.5" paper length.
HL (line 16430) Number of blank lines required at head of page - may be any number from 0 through 10. (Incidentally this is the position to which you should set the printer head when first prompted to set the printer).
MRPI (line 16420) Determines the number of lines on which filenames may be printed on the disk insert sheet.
DPP (line 16440) Set to zero to print as many catalogue sheets as possible on each page. Set to 1 and only one catalogue sheet will be printed on each page.
LNDIR_FL (line 16450) Set to zero to print 22 lines for filenames on each catalogue sheet. Set to 1 to print catalogue sheets in minimum number of lines.
LNINS_FL (line 16460) Set to zero print filenames on the insert sheet down the page. Set to 1 to print filenames in minimum number of lines.
Line 16470 in the initialisation routine checks that all the above preset variables are within a predefined range and, if not, the program will stop with an error message.

MODIFYING THE PROGRAM

Three customised screens are used to provide some enhancement in respect of colour and layout of displayed information. The display list instructions for these screens is held in the Data statements in lines 17100 to 17280,but is transferred to memory locations $0600 to $06FF during the initialisation stage. The program is therefore able to flip between these screens almost instantly.
Most of the main subroutines used are capable of changing the screen colours / character luminance through the variables TITLECOL, BACKCOL and CHARLUM. If you wish to change the colour etc. of any particular screen, simply change the value assigned to the appropriate variable in the opening lines of the relevant procedure.
Should you find that the program as listed does not provide quite exactly what you require, it should be a relatively easy matter to change it. The subroutines are mostly self contained and self explanatory.

LAST WORD

There is of course no need to RUN this program every time you change a disk's contents. With the printouts provided there is usually sufficient room on the sheets to make several manual amendments. The program can then be reRUN when the modified sheets are filled with changes.
I hope you will find this utility as useful and helpful as I have. It has certainly made keeping track of disk files much easier.

Listing overleaf ☞

DISK FILE TRACKER

```
CS 1 REM ######################################
ZP 2 REM #        DISK INDEX UTILITY          #
YH 3 REM #           (TURBO BASIC)            #
FI 4 REM #          by D.T.Pinkney            #
SG 5 REM # ---------------------------------- #
AU 6 REM #   NEW ATARI USER - JUN 1993        #
CY 7 REM ######################################
NN 8 REM
LX 90 GRAPHICS 0
VE 100 EXEC SETUP_DLS
CT 110 EXEC INIT
XO 120 # NEW_DISK
KG 130 EXEC DISK_IN
TX 140 IF K=N27
SJ 150   OPTION=N3
PL 160   GO# EXIT
IW 170 ENDIF
RY 180 DERR_FL=N0
YG 190 EXEC READ_DIR
KY 200 IF DERR_FL=N1
FK 210   GO# NEW_DISK
IN 220 ENDIF
AV 230 IF NF>N1
KH 240   EXEC PRIOR_SORT
PS 250   EXEC ALPHA_SORT
CT 260   EXEC SORT_DIR
IX 270 ENDIF
CM 280 # MENU
KI 290 EXEC MAIN_MENU
EQ 300 OPTION=K
PR 310 IF OPTION=N1
QU 320   EXEC DISP_DIR
GE 330   IF K=83
LD 340     GO# NEW_DISK
XH 350   ELSE
UC 360     GO# MENU
YA 370   ENDIF
JA 380 ENDIF
QX 390 IF OPTION=N2
WQ 400   EXEC DISK_HEADER
GB 410   IF K=83
LA 420     GO# NEW_DISK
XT 430   ENDIF
GS 440   IF CAT_FLAG=N1
HK 450     EXEC PREP_DIR
XZ 460   ENDIF
OH 470   IF INS_FLAG=N1
JR 480     BP=BP+N51+NF*N16+N7
KD 490     ND=ND+N1
TA 500     IF BP>13900
XU 510       EXEC MEM_FULL
JD 520       EXEC PREP_INS
MC 530       EXEC CONTIN
RW 540     ENDIF
XY 550   ENDIF
FX 560   GO# NEW_DISK
JA 570 ENDIF
EE 580 # EXIT
RP 590 IF OPTION=N3
AH 600   IF ND>N0
SC 610     EXEC EXIT_INS
PO 620     EXEC PREP_INS
XV 630   ENDIF
GF 640   EXEC ANOTH_DISK
JL 650   IF K=89
LK 660     GO# NEW_DISK
YD 670   ENDIF
QE 680   EXEC END_SCRN
JF 690 ENDIF
NW 700 END
OW 710 ------------------------------
OY 720 ------------------------------
AN 1000 PROC DEF_SCRN
VD 1010   EXEC STD_SCRN
YM 1020   DPOKE DLB+N9,SCREEN
MR 1030   DPOKE DL,1536
TT 1040   DPOKE SAVMSC,SCREEN
OK 1050   POKE SCRNMODE,MODE
VZ 1060   POKE TC,TITLECOL
AR 1070   POKE BC,BACKCOL
BR 1080   POKE CL,CHARLUM
FE 1090   POKE SDMCTL,34
YE 1100 ENDPROC
XH 1110 ------------------------------
XK 1120 ------------------------------
PR 1200 PROC DISP_SCRN
VH 1210   EXEC STD_SCRN
AU 1220   DPOKE DLB+41,SCREEN
LD 1230   DPOKE DL,1570
TX 1240   DPOKE SAVMSC,SCREEN
OO 1250   POKE SCRNMODE,MODE
WD 1260   POKE TC,TITLECOL
AV 1270   POKE BC,BACKCOL
BV 1280   POKE CL,CHARLUM
FI 1290   POKE SDMCTL,34
YI 1300 ENDPROC
XL 1310 ------------------------------
XO 1320 ------------------------------
MD 1400 PROC WKG_SCRN
VL 1410   EXEC STD_SCRN
HK 1420   DPOKE DLB+77,SCREEN
JY 1430   DPOKE DL,1604
UB 1440   DPOKE SAVMSC,SCREEN
OS 1450   POKE SCRNMODE,MODE
WH 1460   POKE TC,TITLECOL
AZ 1470   POKE BC,BACKCOL
BZ 1480   POKE CL,CHARLUM
FM 1490   POKE SDMCTL,34
YM 1500 ENDPROC
XP 1510 ------------------------------
XS 1520 ------------------------------
NG 1600 PROC STD_SCRN
RY 1610   GRAPHICS N0
WJ 1620   POKE SDMCTL,N0
SD 1630   SCREEN=DPEEK(SAVMSC)
TB 1640   MODE=PEEK(SCRNMODE)
US 1650   POKE CURS,N1
KV 1660   POKE LMARG,N0
BD 1670   POKE RMARG,39
DU 1680   EXEC DIS_BRK
ZP 1690 ENDPROC
XQ 1700 ------------------------------
XT 1710 ------------------------------
CI 1800 PROC DIS_BRK
XC 1810   POKE N16,64
NT 1820   POKE 53774,64
ZB 1830 ENDPROC
YE 1840 ------------------------------
YH 1850 ------------------------------
DK 1900 PROC EN_BRK
HX 1910   POKE N16,192
DI 1920   POKE 53774,247
ZD 1930 ENDPROC
YG 1940 ------------------------------
YJ 1950 ------------------------------
ED 2000 PROC DISK_IN
CT 2010   TITLECOL=N26
PF 2020   BACKCOL=N16
ZE 2030   CHARLUM=N12
HC 2040   EXEC DEF_SCRN
GG 2050   POSITION N12,N8
RA 2060   ? "Insert disk....."
XM 2070   POSITION N16,N14
LX 2080   ? "Continue"
QY 2090   IF STAGE=N0
IK 2100     # KEYPR_1
MK 2110     EXEC WAIT_KEY
XE 2120     IF K<>67
CB 2130       EXEC ERROR
SF 2140       GO# KEYPR_1
TK 2150     ENDIF
UD 2160   ELSE
MF 2170     POSITION N13-N11*(ND>N0),N16
KV 2180     ? "ESCape to exit";
NZ 2190     IF ND>N0
ZS 2200       ? "/print disk inserts"
TA 2210     ENDIF
JK 2220     # KEYPR_2
MS 2230     EXEC WAIT_KEY
HQ 2240     IF K<>67 AND K<>N27
CJ 2250       EXEC ERROR
TJ 2260       GO# KEYPR_2
TS 2270     ENDIF
XJ 2280   ENDIF
QT 2290   CLS
XF 2300   STAGE=N1
YM 2310 ENDPROC
```

```
XP 2320 ---------------------------------
XS 2330 ---------------------------------
UE 2400 PROC READ_DIR
DB 2410   TITLECOL=N26
YG 2420   BACKCOL=144
ZM 2430   CHARLUM=N12
HK 2440   EXEC DEF_SCRN
SQ 2450   POSITION N6,N8
JK 2460   ? "Reading disk directory .....
   "
FV 2470   CFI=BP+N51
DQ 2480   TRAP #DISK_RESP
DH 2490   OPEN #N1,N6,N0,"D:*.*"
MU 2500   TRAP #DISK_ERR
GM 2510   NF=N0:USECT=N0
WX 2520   # NEXT_FILE
WA 2530   INPUT #N1,I$
DQ 2540   IF I$(N5,N8)="FREE"
MB 2550     TRAP 40000
VL 2560     GO# DIR_DONE
XM 2570   ENDIF
KU 2580   NF=NF+N1
WP 2590   USECT=USECT+VAL(I$(N15,N17))
HA 2600   GOTO 2660:REM DEL LINE FOR '.'
UH 2610   FOR I=N3 TO N13
FM 2620     IF I$(I,I)=" "
BM 2630       I$(I,I)="."
TR 2640     ENDIF
CH 2650   NEXT I
ND 2660   F$(CFI,CFI+N12)=I$(N1,N13)
WC 2670   CFI=CFI+N13
VF 2680   F$(CFI,CFI+N2)=I$(N15,N17)
OI 2690   CFI=CFI+N3
BE 2700   GO# NEXT_FILE
QX 2710   # DIR_DONE
JT 2720   CLOSE #N1
MB 2730   H$=STR$(USECT)
ZK 2740   L=LEN(H$)
YH 2750   W$="    "
OG 2760   W$(N5-L,N4)=H$
XB 2770   F$(CFI,CFI+3)=W$
OY 2780   CFI=CFI+N4
TZ 2790   F$(CFI,CFI+N3)=I$(N1,N3)
OX 2800   H$=STR$(NF)
ZD 2810   L=LEN(H$)
EG 2820   W$="   "
MW 2830   W$(N4-L,N3)=H$
PE 2840   F$(BP+N48,BP+N50)=W$
CD 2850   # EXIT_DIR
KH 2860   CLOSE #N1
ZO 2870 ENDPROC
HX 2880 # DISK_RESP
EG 2890 DERR_FL=N1
GF 2900 EXEC DISK_NORESP
XK 2910 GO# EXIT_DIR
JZ 2920 # DISK_ERR
DQ 2930 DERR_FL=N1
XA 2940 EXEC DISK_ERROR
XN 2950 GO# EXIT_DIR
YN 2960 ---------------------------------
YQ 2970 ---------------------------------
RC 3000 PROC PRIOR_SORT
CU 3010   TITLECOL=N26
PG 3020   BACKCOL=N16
ZF 3030   CHARLUM=N12
HD 3040   EXEC DEF_SCRN
KJ 3050   SEL_SORT=N0
TW 3060   POSITION N8,N8
EL 3070   ? "Any files to have"
UX 3080   POSITION N8,N9
IH 3090   ? "priority in sort order ?"
WB 3100   POSITION N15,N14
AQ 3110   ? "Yes or No"
OP 3120   EXEC YN_KEY
KT 3130   IF K=89
SM 3140     SEL_SORT=N1
WZ 3150   ENDIF
YY 3160 ENDPROC
YB 3170 ---------------------------------
YE 3180 ---------------------------------
YH 3500 PROC ALPHA_SORT
DE 3510   TITLECOL=N26
XR 3520   BACKCOL=224
ZP 3530   CHARLUM=N12
HN 3540   EXEC DEF_SCRN
TL 3550   ALPHA=N0
FI 3560   POSITION N10,N8
UY 3570   ? "Sort directory into"
GK 3580   POSITION N10,N9
EU 3590   ? "alphabetical order ?"
WL 3600   POSITION N15,N14
BA 3610   ? "Yes or No"
OZ 3620   EXEC YN_KEY
LD 3630   IF K=89
EX 3640     ALPHA=N1
XJ 3650   ENDIF
ZI 3660 ENDPROC
YL 3670 ---------------------------------
YO 3680 ---------------------------------
QC 4000 PROC SORT_DIR
CV 4010   TITLECOL=N26
YA 4020   BACKCOL=144
ZG 4030   CHARLUM=N12
HE 4040   EXEC DEF_SCRN
UM 4050   POSITION N9,N8
KM 4060   ? "Sorting directory ...."
ID 4070   OFF=BP+N51
JB 4080   FC=N0
LJ 4090   IF SEL_SORT=N1
FD 4100     RESTORE 17510
FW 4110     READ NPF
NC 4120     FOR PASS=N1 TO NPF
OX 4130       READ I$
WY 4140       N=FC
HM 4150       CFI=OFF
DG 4160       # STEP_FILE
HV 4170       IF F$(CFI+N2,CFI+N12)=I$
DY 4180         IF CFI<>OFF
JK 4190           I$=F$(OFF,OFF+N15)
FZ 4200           F$(OFF,OFF+N15)=F$(CFI,
   CFI+N15)
PD 4210           F$(CFI,CFI+N15)=I$
AX 4220         ENDIF
NW 4230         FC=FC+N1
OL 4240         OFF=OFF+N16
IQ 4250       ELSE
EB 4260         CFI=CFI+N16
YK 4270         N=N+N1
GE 4280         IF N<NF
EG 4290           GO# STEP_FILE
AT 4300         ENDIF
UO 4310       ENDIF
DC 4320     NEXT PASS
WY 4330   ENDIF
IF 4340   IF ALPHA=N1 AND (NF-FC)>N1
BK 4350     FOR PASS=NF-FC-N1 TO N1 STEP
   -1
HT 4360       CFI=OFF
CI 4370       NFI=CFI+N16
HV 4380       XFL=N0
FS 4390       FOR FILE=N1 TO PASS
GL 4400         I$=F$(CFI,CFI+N15)
FK 4410         IF I$(N3,N13)>F$(NFI+N2,N
   FI+N12)
XP 4420           F$(CFI,CFI+N15)=F$(NFI,
   NFI+N15)
HH 4430           F$(NFI,NFI+N15)=I$
JM 4440           XFL=N1
BK 4450         ENDIF
EF 4460         CFI=CFI+N16
KG 4470         NFI=CFI+N16
LT 4480       NEXT FILE
MN 4490       IF XFL=N0
DT 4500         POP :GO# SORTED
US 4510       ENDIF
DG 4520     NEXT PASS
XC 4530   ENDIF
ZB 4540   # SORTED
ZE 4550 ENDPROC
YH 4560 ---------------------------------
YK 4570 ---------------------------------
KC 4600 PROC MAIN_MENU
DH 4610   TITLECOL=N26
BV 4620   BACKCOL=176
ZS 4630   CHARLUM=N12
```

continued

DISK FILE TRACKER

```
HQ 4640    EXEC DEF_SCRN
DX 4650    POSITION N15,N2
LU 4660    ? "MAIN MENU"
EZ 4670    POSITION N15,N3
MP 4680    ? "========="
TF 4690    POSITION N7,N7
WE 4700    ? "1  Display disk directory"
TZ 4710    POSITION N7,N9
XT 4720    ? "2  Print disk directory/inse
   rt"
DF 4730    POSITION N7,N11
SJ 4740    ? "3  Exit program"
KH 4750    POSITION N12,19
GU 4760    ? "Enter choice ...."
AM 4770    # AGAIN_1
WV 4780    EXEC WAIT_KEY
SP 4790    K=K-N48
ES 4800    IF K<N1 OR K>N3
ZH 4810      EXEC ERROR
MG 4820      GO# AGAIN_1
XI 4830    ENDIF
ZH 4840 ENDPROC
YK 4850 ------------------------------
YN 4860 ------------------------------
FJ 5000 PROC DISP_DIR
LE 5010    TITLECOL=254
DH 5020    BACKCOL=N0
ZH 5030    CHARLUM=N12
DR 5040    EXEC DISP_SCRN
GK 5050    IF NF>N0
AX 5060      OFF=BP+N51
YH 5070      RTP=N22:ROWOFF=N0
ZB 5080      IF NF<60
MD 5090        RTP=N20:ROWOFF=N1
SY 5100      ENDIF
RV 5110      FOR ROW=N0 TO RTP-N1
CS 5120        POSITION N0,ROW+ROWOFF
OH 5130        FOR COL=N0 TO N2
AQ 5140          FN=ROW+(COL*RTP)
OC 5150          IF FN<=NF-N1
RD 5160            CFI=OFF+FN*N16
VP 5170            ? F$(CFI+N2,CFI+N9);
KK 5180            IF F$(CFI+N10,CFI+N12)<
   >"   "
RB 5190              ? ".";
QG 5200            ELSE
EX 5210              ? " ";
ME 5220            ENDIF
VF 5230            ? F$(CFI+N10,CFI+N12);
GO 5240            IF COL<N2
KA 5250              ? "  ";
MQ 5260            ENDIF
KN 5270          ELSE
XO 5280            ? " ";
BT 5290          ENDIF
LX 5300        NEXT COL
JY 5310      NEXT ROW
TY 5320    ELSE
MM 5330      POSITION N8,N9
YW 5340      ? "No files on this disk !!!"
XF 5350    ENDIF
RS 5360    POSITION N5,22
KR 5370    ? "Continue          Skip this di
   sk";
WF 5380    # CONTSKIP
WR 5390    EXEC WAIT_KEY
GU 5400    IF K<>67 AND K<>83
ZA 5410      EXEC ERROR
AU 5420      GO# CONTSKIP
XB 5430    ENDIF
ZA 5440 ENDPROC
YD 5450 ------------------------------
YG 5460 ------------------------------
EF 5600 PROC DISK_HEADER
BQ 5610    TITLECOL=46
OL 5620    BACKCOL=32
BD 5630    CHARLUM=N14
UZ 5640    EXEC WKG_SCRN
SI 5650    # START_HEAD
CH 5660    Y=N12:LINES=N5
FP 5670    # DISK_NUM
EI 5680    POSITION N0,Y
LI 5690    ? "Disk number ";
TQ 5700    POKE CURS,N0
MN 5710    INPUT I$
UP 5720    POKE CURS,N1
WM 5730    EXEC WIPE
AB 5740    L=LEN(I$)
GK 5750    IF L<N1 OR L>N3
ZV 5760      EXEC ERROR
NE 5770      GO# DISK_NUM
XW 5780    ENDIF
NZ 5790    FOR I=N1 TO L
QT 5800      IF I$(I,I)<"0" OR I$(I,I)>"9"
CM 5810        EXEC ERROR
ZY 5820        POP
AC 5830        GO# DISK_NUM
TY 5840      ENDIF
CO 5850    NEXT I
JW 5860    DN$="000"
ZF 5870    DN$(4-L,3)=I$
JP 5880    POSITION N0,N1
EF 5890    ? "Disk No. ";DN$
KB 5900    # SIDE
DT 5910    POSITION N0,Y
LI 5920    ? "Side A/B ";
UD 5930    POKE CURS,N0
NA 5940    INPUT I$
VC 5950    POKE CURS,N1
WZ 5960    EXEC WIPE
TJ 5970    IF LEN(I$)<>N1 OR (I$<>"A" AND
   I$<>"B")
AF 5980      EXEC ERROR
SD 5990      GO# SIDE
WL 6000    ENDIF
ZZ 6010    DS$=I$
ZJ 6020    POSITION N20,N1
WO 6030    ? "Side  ";DS$
GH 6040    # TITLE
DO 6050    POSITION N0,Y
XE 6060    ? "Disk title (1-44 chars)"
TY 6070    POKE CURS,N0
MV 6080    INPUT I$
UX 6090    POKE CURS,N1
VS 6100    EXEC WIPE
JX 6110    IF LEN(I$)<N1
YY 6120      EXEC ERROR
BP 6130      GO# TITLE
WZ 6140    ENDIF
UU 6150    T$=I$
KM 6160    POSITION N0,N3
YB 6170    ? "Disk title :"
PW 6180    ? T$
EC 6190    POSITION N0,Y
VK 6200    ? "Disk Dir catalogue sheet req
   uired ?"
RI 6210    POSITION N15,Y+N2
AY 6220    ? "Yes or No"
OX 6230    EXEC YN_KEY
WG 6240    EXEC WIPE
JY 6250    CAT_FLAG=N1
NU 6260    POSITION N0,N7
YG 6270    ? "Disk catalogue sheet ";
KM 6280    IF K=78
PZ 6290      ? "NOT ";
LR 6300      CAT_FLAG=N0
WU 6310    ENDIF
SB 6320    ? "required"
DO 6330    POSITION N0,Y
TB 6340    ? "Disk Insert required ?"
RH 6350    POSITION N15,Y+N2
BM 6360    ? "Yes or No"
PL 6370    EXEC YN_KEY
WU 6380    EXEC WIPE
QL 6390    INS_FLAG=N1
XA 6400    POSITION N0,N10
AX 6410    ? "Disk Insert ";
JY 6420    IF K=78
PL 6430      ? "NOT ";
TO 6440      INS_FLAG=N0
XI 6450    ENDIF
SP 6460    ? "required"
YK 6470    POSITION N9,Y+N1
VZ 6480    ? "Continue       Do again"
RW 6490    POSITION N13,Y+N3
MG 6500    ? "Skip this disk"
GZ 6510    # REKEY
```

DISK FILE TRACKER

```
WB 6520   EXEC WAIT_KEY
OI 6530   IF K<>67 AND K<>68 AND K<>83
ZM 6540     EXEC ERROR
CM 6550     GO# REKEY
XN 6560   ENDIF
JO 6570   IF K=67
HP 6580     OFF=BP
ZM 6590     F$(OFF,OFF+N2)=DN$
OL 6600     OFF=OFF+N3
NX 6610     F$(OFF,OFF)=DS$
NF 6620     OFF=OFF+N1
QU 6630     IF LEN(T$)<N44
BP 6640       FOR I=LEN(T$)+N1 TO N44
QW 6650         T$(I,I)=" "
KO 6660       NEXT I
UE 6670     ENDIF
TH 6680     F$(OFF,OFF+43)=T$
EF 6690     OFF=OFF+N44
UB 6700   ELSE
KW 6710     IF K=68
UA 6720       CLS
RS 6730       GO# START_HEAD
TX 6740     ENDIF
XO 6750   ENDIF
ZN 6760 ENDPROC
YQ 6770 ------------------------------
YT 6780 ------------------------------
HR 7000 PROC PREP_DIR
KB 7010   IF OUT=N0
CF 7020     EXEC SET_PRTR
WV 7030   ENDIF
AU 7040   # REPR_DIR
AK 7050   TITLECOL=26
YP 7060   BACKCOL=144
ZV 7070   CHARLUM=N12
HT 7080   EXEC DEF_SCRN
FR 7090   OFF=BP
QY 7100   IF LNDIR_FL=N0
MD 7110     RTP=N22
TW 7120   ELSE
WE 7130     RTP=INT((NF+2.5)/N3)
XA 7140   ENDIF
XQ 7150   IF RTP+N5+N4>MLPP-LINESUM
TG 7160     EXEC NEW_PAGE
XJ 7170   ENDIF
RX 7180   EXEC OPEN_PRTR
TW 7190   POSITION N6,N9
XX 7200   ? "Printing disk directory...."
FV 7210   EXEC PR_DIR
KE 7220   CLOSE #N2
AT 7230   LINESUM=LINESUM+N5+RTP+N4
BP 7240   IF DPP=N0
DY 7250     IF MLPP-LINESUM>N1
SR 7260       EXEC OPEN_PRTR
GG 7270       PRINT #N2:PRINT #N2
PE 7280       CLOSE #N2
TA 7290       LINESUM=LINESUM+N2
TE 7300     ENDIF
TX 7310   ELSE
SY 7320     EXEC NEW_PAGE
XB 7330   ENDIF
XX 7340   EXEC ANOTH_COP
LH 7350   IF K=89
CZ 7360     CLS
IK 7370     GO# REPR_DIR
XQ 7380   ENDIF
ZP 7390 ENDPROC
XQ 7400 ------------------------------
XT 7410 ------------------------------
KA 7500 PROC PR_DIR
KJ 7510   FOR I=N1 TO 80
VY 7520     PRINT #N2;"=";
CE 7530   NEXT I
TB 7540   PRINT #N2;CHR$(N13)
WX 7550   PRINT #N2;CHR$(N27);CHR$(119);CHR$(N1);
NY 7560   PRINT #N2;"Disk No.";F$(OFF,OFF+N2);
UR 7570   OFF=OFF+N3
OZ 7580   PRINT #N2;"       Side ";F$(OFF,OFF);
TP 7590   OFF=OFF+N1
CZ 7600   PRINT #N2;"       Title: ";F$(OFF,OFF+43);
```

```
UL 7610   PRINT #N2;CHR$(N27);CHR$(119);CHR$(N0)
KO 7620   FOR I=N1 TO 80
MF 7630     PRINT #N2;"-";
CJ 7640   NEXT I
TK 7650   PRINT #N2
HX 7660   OFF=OFF+N44+N3
TQ 7670   PRINT #N2
KR 7680   IF RTP>N0
TF 7690     FOR ROW=N0 TO RTP-N1
SS 7700       PRINT #N2;"  ";
OP 7710       FOR COL=N0 TO N2
AY 7720         FN=ROW+(COL*RTP)
RN 7730         IF FN+N1<=NF
RL 7740           CFI=OFF+FN*N16
RS 7750           PRINT #N2;F$(CFI,CFI+N9);
KS 7760           IF F$(CFI+N10,CFI+N12)<>"   "
KA 7770             PRINT #N2;".";
RQ 7780           ELSE
UQ 7790             PRINT #N2;" ";
MM 7800           ENDIF
JZ 7810           CFI=CFI+N10
HF 7820           PRINT #N2;F$(CFI,CFI+N2);
QD 7830           CFI=CFI+N3
DE 7840           PRINT #N2;" (";F$(CFI,CFI+N2);
ER 7850           PRINT #N2;")";
OK 7860           IF COL<2
RV 7870             PRINT #N2;"          ";
NK 7880           ENDIF
LH 7890         ELSE
HE 7900           PRINT #N2;
BL 7910         ENDIF
MR 7920       NEXT COL
BG 7930       PRINT #N2
KV 7940     NEXT ROW
UV 7950   ELSE
MJ 7960     PRINT #N2:PRINT #N2:PRINT #N2
JB 7970     PRINT #N2;"  NO FILES ON THIS DISK !"
XM 7980     PRINT #N2;"  ======================="
MS 7990     PRINT #N2:PRINT #N2:PRINT #N2
KR 8000     RTP=N8
WQ 8010   ENDIF
SQ 8020   PRINT #N2
JR 8030   IF RTP>N0
RY 8040     PRINT #N2;"             ";F$(BP+N48,BP+N50);
AK 8050     PRINT #N2;" Files          ";
CP 8060     OFF=BP+N51+NF*N16
VL 8070     PRINT #N2;F$(OFF,OFF+N3);
QA 8080     PRINT #N2;" Used sectors      ";
PV 8090     OFF=OFF+N4
TM 8100     PRINT #N2;F$(OFF,OFF+N2);
QD 8110     PRINT #N2;" Free sectors"
TX 8120   ELSE
HH 8130     PRINT #N2
XB 8140   ENDIF
TB 8150   PRINT #N2
KR 8160   FOR I=N1 TO 80
ZG 8170     PRINT #N2;"=";
CM 8180   NEXT I
TN 8190   PRINT #N2
YN 8200 ENDPROC
XQ 8210 ------------------------------
XT 8220 ------------------------------
PB 8400 PROC PREP_INS
KK 8410   IF OUT=N0
CO 8420     EXEC SET_PRTR
XE 8430   ENDIF
BG 8440   IF LINESUM>HL
TK 8450     EXEC NEW_PAGE
XN 8460   ENDIF
ND 8470   BP=N1
XC 8480   FOR DISK=N1 TO ND
FU 8490     # REPR_INS
LQ 8500     TITLECOL=N26
```

continued

DISK FILE TRACKER

```
PI 8510       BACKCOL=N16
BF 8520,      CHARLUM=N12
WP 8530       EXEC DEF_SCRN
KB 8540       NF=VAL(F$(BP+N48,BP+N50))
FN 8550       TLROWS=INT((NF+1.5)/N2)
AV 8560       INSERTS=INT((TLROWS+N2-N1)/MR
   PI)+N1
BY 8570       FOR PAGE=N1 TO INSERTS
OH 8580         OFF=BP
AB 8590         RA=MRPI
EX 8600         IF PAGE=INSERTS
CD 8610           RA=RA-N2
VB 8620         ENDIF
BP 8630         RTP=RA
TG 8640         FAP=(PAGE-N1)*MRPI*N2
YX 8650         FL=NF-FAP
EA 8660         RAP=(PAGE-N1)*MRPI
LS 8670         RL=TLROWS-RAP
PH 8680         IF LNINS_FL=N0
OF 8690           IF FL<RTP
HH 8700             RTP=FL
BI 8710           ENDIF
IV 8720         ELSE
VL 8730           IF RL<RTP
QZ 8740             RTP=RL
BU 8750           ENDIF
VP 8760         ENDIF
QV 8770         IF MRPI+N9>MLPP-LINESUM
NB 8780           EXEC NEW_PAGE
VY 8790         ENDIF
SM 8800         EXEC OPEN_PRTR
HV 8810         POSITION N6,N9
SM 8820         ? "Printing disk insert(s).
   ..."
DX 8830         EXEC PR_INS
PF 8840         CLOSE #N2
RM 8850         LINESUM=LINESUM+MRPI+N9
XO 8860         IF MLPP-LINESUM>N1
BD 8870           EXEC OPEN_PRTR
DE 8880           PRINT #N2:PRINT #N2
MI 8890           CLOSE #N2
UK 8900           LINESUM=LINESUM+N2
VE 8910         ENDIF
ME 8920       NEXT PAGE
TZ 8930       EXEC ANOTH_COP
NF 8940       IF K=89
EX 8950         GO# REPR_INS
UJ 8960       ENDIF
MV 8970       BP=CFI+N3
DY 8980     NEXT DISK
MV 8990     ND=N0
LP 9000     BP=N0
DN 9010     EXEC NEW_PAGE
YQ 9020 ENDPROC
XT 9030 ------------------------------
XW 9040 ------------------------------
PZ 9100 PROC PR_INS
GV 9110     PRINT #N2;B$(N1,N10);L1$
IC 9120     PRINT #N2;B$(N1,N10);L2$
LW 9130     PRINT #N2;B$(N1,N10);"|    ";
WO 9140     PRINT #N2;CHR$(N27);CHR$(119);C
   HR$(N1);
DU 9150     PRINT #N2;"Disk No. ";
KB 9160     PRINT #N2;F$(OFF,OFF+N2);
BF 9170     PRINT #N2;"        Side ";
EW 9180     PRINT #N2;F$(OFF+N3,OFF+N3);
IX 9190     PRINT #N2;"              ";
QO 9200     IF INSERTS>N1
NN 9210       PRINT #N2;"Page ";
XK 9220       W$=STR$(PAGE)
OL 9230       PRINT #N2;W$;
UG 9240     ELSE
LH 9250       PRINT #N2;"        ";
XK 9260     ENDIF
HB 9270     PRINT #N2;CHR$(27);CHR$(119);CH
   R$(N0);
EM 9280     PRINT #N2;"   |"
KD 9290     PRINT #N2;B$(N1,N10);L3$
SC 9300     PRINT #N2;B$(N1,N10);"|  DOS 2.
   5 format";B$(N1,32);"|"
CU 9310     PRINT #N2;B$(N1,N10);"|   ";F$(O
   FF+N4,OFF+47);"  |"
DG 9320     OFF=OFF+N51
JN 9330     PRINT #N2;B$(N1,N10);L3$
IM 9340     PRINT #N2;B$(N1,N10);L2$
KE 9350     IF RTP>N0
SS 9360       FOR ROW=N0 TO RTP-N1
UD 9370         PRINT #N2;B$(N1,N10);"|  ";
OD 9380         FOR COL=N0 TO N1
HN 9390           FN=FAP+ROW+(COL*RTP)
NX 9400           IF FN<=NF-N1
QY 9410             CFI=OFF+FN*N16
RF 9420             PRINT #N2;F$(CFI,CFI+N9
   );
JZ 9430             CFI=CFI+N10
IG 9440             IF F$(CFI,CFI+N2)<>"
   "
JQ 9450               PRINT #N2;".";
RG 9460             ELSE
UG 9470               PRINT #N2;" ";
NE 9480             ENDIF
HU 9490             PRINT #N2;F$(CFI,CFI+N2
   );
PQ 9500             CFI=CFI+N3
CR 9510             PRINT #N2;" (";F$(CFI,C
   FI+N2);
EE 9520             PRINT #N2;")";
QC 9530             IF COL=N0 THEN PRINT #N
   2;"     ";
KO 9540           ELSE
HC 9550             PRINT #N2;B$(N1,N20);
BU 9560           ENDIF
NA 9570         NEXT COL
DC 9580         PRINT #N2;"   |"
LE 9590       NEXT ROW
XA 9600     ENDIF
ET 9610     BR=RA-RTP
HD 9620     IF BR>N0
GD 9630       FOR BLL=N1 TO BR
LA 9640         PRINT #N2;B$(N1,N10);L2$
SN 9650       NEXT BLL
XS 9660     ENDIF
BX 9670     IF PAGE=INSERTS
CR 9680       CFI=OFF+NF*N16
HZ 9690       PRINT #N2;B$(N1,N10);L2$
KO 9700       H$=STR$(NF)
KM 9710       L=LEN(H$)
AD 9720       W$="    "
AV 9730       W$(N1,L)=H$
AU 9740       PRINT #N2;B$(N1,N10);"|  File
   s: ";W$;
RE 9750       PRINT #N2;"      Sectors: ";
XH 9760       H$=F$(CFI,CFI+N3)
LE 9770       L=LEN(H$)
XB 9780       W$="    "
TG 9790       W$(N5-L,N4)=H$
BP 9800       PRINT #N2;W$;" used , ";
HS 9810       CFI=CFI+N4
VY 9820       H$=F$(CFI,CFI+N2)
KU 9830       L=LEN(H$)
AL 9840       W$="   "
RP 9850       W$(N4-L,N3)=H$
IX 9860       PRINT #N2;W$;" free  |"
XZ 9870     ENDIF
IE 9880     PRINT #N2;B$(N1,N10);L1$
AB 9890 ENDPROC
YC 9900 ------------------------------
YF 9910 ------------------------------
IQ 10000 PROC ANOTH_COP
WK 10010   TITLECOL=N26
EN 10020   BACKCOL=N16
PM 10030   CHARLUM=N12
EE 10040   EXEC DEF_SCRN
FT 10050   POSITION N10,N9
IY 10060   ? "Print another copy ?"
WB 10070   POSITION N15,N11
IT 10080   ? "Yes or No"
IB 10090   EXEC YN_KEY
CU 10100 ENDPROC
HT 10110 ------------------------------
HX 10120 ------------------------------
SG 10200 PROC NEW_PAGE
SN 10210   EXEC OPEN_PRTR
WF 10220   FOR I=N1 TO MLPP-LINESUM+HL
TL 10230     PRINT #N2
FH 10240   NEXT I
XH 10250   PRINT #N2;CHR$(N27);CHR$(64);
TN 10260   CLOSE #N2
```

DISK FILE TRACKER

```
BB 10270   LINESUM=HL
ED 10280 ENDPROC
JC 10290 ------------------------------
HV 10300 ------------------------------
QH 10400 PROC ANOTH_DISK
WW 10410   TITLECOL=N26
QE 10420   BACKCOL=176
PY 10430   CHARLUM=N12
SH 10440   EXEC DEF_SCRN:REM REPLACE CLS?
HQ 10450   POSITION N13,N8
LI 10460   ? "Another disk ?"
ZH 10470   POSITION N15,N14
JF 10480   ? "Yes or No"
IN 10490   EXEC YN_KEY
LS 10500   CLS
DK 10510 ENDPROC
IJ 10520 ------------------------------
IN 10530 ------------------------------
CJ 10600 PROC MEM_FULL
SM 10610   TITLECOL=46
EH 10620   BACKCOL=28
EY 10630   CHARLUM=N0
EW 10640   EXEC DEF_SCRN
PT 10650   POSITION N6,N6
TI 10660   ? "<<<< INDEX MEMORY FULL >>>>
   "
TY 10670   POSITION N9,N8
LJ 10680   ? "Clear index memory by"
VC 10690   POSITION N9,N9
IV 10700   ? "printing disk inserts"
FE 10710   POSITION N5,N15
UX 10720   ? "Press any key to continue..
   ..."
UL 10730   EXEC WAIT_KEY
MO 10740   CLS
EG 10750 ENDPROC
JF 10760 ------------------------------
JJ 10770 ------------------------------
NC 11000 PROC EXIT_INS
WM 11010   TITLECOL=N26
DR 11020   BACKCOL=28
EI 11030   CHARLUM=N0
EG 11040   EXEC DEF_SCRN
TA 11050   POSITION N9,N8
OB 11060   ? "Print disk inserts"
UE 11070   POSITION N9,N9
CO 11080   ? "before leaving program"
FR 11090   POSITION N5,N15
TZ 11100   ? "Press any key to continue..
   ..."
TN 11110   EXEC WAIT_KEY
LQ 11120   CLS
DI 11130 ENDPROC
IH 11140 ------------------------------
IL 11150 ------------------------------
PR 11200 PROC CONTIN
SC 11210   TITLECOL=46
QA 11220   BACKCOL=176
PU 11230   CHARLUM=N12
EM 11240   EXEC DEF_SCRN
QI 11250   POSITION N5,N8
XX 11260   ? "<<<< DISK INSERTS PRINTED >
   >>>"
TD 11270   POSITION N12,N10
BE 11280   ? "MEMORY NOW CLEAR"
FX 11290   POSITION N5,N15
UF 11300   ? "Press any key to continue..
   ..."
TT 11310   EXEC WAIT_KEY
LW 11320   CLS
DO 11330 ENDPROC
IN 11340 ------------------------------
IR 11350 ------------------------------
AD 11500 PROC END_SCRN
HZ 11510   GRAPHICS N0
DS 11520   POSITION N14,N3
AR 11530   ? "EXIT PROGRAM"
EX 11540   POSITION N14,N4
DP 11550   ? "============"
KD 11560   IF INS_FLAG=N1
LR 11570     POSITION N7,N7
GR 11580     ? "All disk insert(s) printe
   d"
YZ 11590   ENDIF
TL 11600   POSITION N12,N11
RQ 11610   ? "Program and all"
UR 11620   POSITION N12,N12
NP 11630   ? "variables cleared !"
LL 11640   POKE 752,N0
YN 11650   POSITION N0,N20
QM 11660   EXEC EN_BRK
JR 11670   CLR :NEW
ER 11680 ENDPROC
JQ 11690 ------------------------------
IJ 11700 ------------------------------
HW 12000 PROC YN_KEY
UZ 12010   # KEY_RESP
TQ 12020   EXEC WAIT_KEY
PB 12030   IF K<>89 AND K<>78
QG 12040     EXEC ERROR
MO 12050     GO# KEY_RESP
YA 12060   ENDIF
DX 12070 ENDPROC
IW 12080 ------------------------------
JR 12200 PROC WAIT_KEY
OP 12210   POKE CH,255
LF 12220   GET K
DN 12230 ENDPROC
IM 12240 ------------------------------
IQ 12250 ------------------------------
YF 12400 PROC ERROR
ZY 12410   POKE BC,54
TK 12420   POKE CL,N0
JJ 12430   SOUND N0,150,N10,8
FI 12440   PAUSE N15
MB 12450   SOUND
BB 12460   POKE BC,BACKCOL
DP 12470   POKE CL,CHARLUM
EN 12480 ENDPROC
JM 12490 ------------------------------
IF 12500 ------------------------------
WY 12600 PROC WIPE
AC 12610   POSITION N0,Y
UK 12620   FOR I=N1 TO LINES
YD 12630     ? B$;
FX 12640   NEXT I
EH 12650 ENDPROC
JG 12660 ------------------------------
JK 12670 ------------------------------
WQ 14000 PROC SET_PRTR
EA 14010   EXEC DEF_SCRN
MS 14020   POKE BC,176
EM 14030   POKE CL,N12
PL 14040   POSITION N4,N8
WD 14050   ? "Set printer to start of new
   page"
SF 14060   POSITION N11,N10
CS 14070   ? "then press any key"
US 14080   EXEC WAIT_KEY
MV 14090   CLS
SO 14100   EXEC OPEN_PRTR
WW 14110   PRINT #N2;CHR$(N27);CHR$(64);
TC 14120   CLOSE #N2
AK 14130   POKE BC,BACKCOL
CY 14140   POKE CL,CHARLUM
AY 14150   LINESUM=HL
KB 14160   OUT=N1
EE 14170 ENDPROC
JD 14180 ------------------------------
JH 14190 ------------------------------
BY 14400 PROC OPEN_PRTR
LF 14410   # TRY_AGAIN
TL 14420   CLOSE #N2
FD 14430   TRAP #PRTR_ERR
KP 14440   OPEN #N2,N8,N0,"P:"
IA 14450   TRAP 40000
EJ 14460 ENDPROC
BG 14470 REM PRINTER ERROR
HL 14480 # PRTR_ERR
NG 14490 CLS :POSITION N9,N8
IM 14500 ? "PRINTER NOT RESPONDING"
UB 14510 EXEC ERROR
SK 14520 PAUSE N50
CQ 14530 CLS
KT 14540 GO# TRY_AGAIN
```

continued

DISK FILE TRACKER

```
JD 14550 ------------------------------
JH 14560 ------------------------------
OR 15000 PROC DISK_NORESP
QU 15010   TITLECOL=26
DE 15020   BACKCOL=54
EQ 15030   CHARLUM=N0
EO 15040   EXEC DEF_SCRN
BS 15050   POSITION N10,N4
DE 15060   ? "DISK DID NOT RESPOND"
PZ 15070   POSITION N4,N8
RH 15080   ? "Is disk in drive and door c
   losed"
YD 15090   POSITION N18,N10
RW 15100   ? "ELSE"
DR 15110   POSITION N7,N12
ZP 15120   ? "Suspect wrong or no format"
HJ 15130   PAUSE 50
OH 15140   BACKCOL=182
AU 15150   POKE BC,BACKCOL
DQ 15160   POSITION N16,N18
QV 15170   ? "Continue"
VP 15180   # WCONT1
VB 15190   EXEC WAIT_KEY
WY 15200   IF K<>67
QG 15210     EXEC ERROR
HH 15220     GO# WCONT1
YA 15230   ENDIF
DX 15240 ENDPROC
IW 15250 ------------------------------
JA 15260 ------------------------------
CK 15300 PROC DISK_ERROR
RD 15310   TITLECOL=26
DN 15320   BACKCOL=54
EZ 15330   CHARLUM=N0
EX 15340   EXEC DEF_SCRN
FX 15350   POSITION N15,N4
YW 15360   ? "DISK ERROR"
DU 15370   POSITION N8,N10
MG 15380   ? "Failed to read directory"
IN 15390   PAUSE 50
OA 15400   BACKCOL=182
AN 15410   POKE BC,BACKCOL
DJ 15420   POSITION N16,N18
QO 15430   ? "Continue"
VY 15440   # WCONT2
UU 15450   EXEC WAIT_KEY
YC 15460   IF K<>67
RK 15470     EXEC ERROR
JF 15480     GO# WCONT2
ZE 15490   ENDIF
DQ 15500 ENDPROC
IP 15510 ------------------------------
IT 15520 ------------------------------
XM 16000 PROC INIT
GE 16010   N0=0:N1=1:N2=2:N3=3:N4=4
US 16020   N5=5:N6=6:N7=7:N8=8:N9=9
FP 16030   N10=10:N11=11:N12=12:N13=13
IB 16040   N14=14:N15=15:N16=16:N17=17
IJ 16050   N18=18:N20=20
UL 16060   N22=22
SD 16070   N26=26:N27=27
MQ 16080   N40=40:N44=44
PT 16090   N48=48:N49=49:N50=50:N51=51
RT 16100   DIM F$(15000)
AY 16110   DIM DN$(N3)
CK 16120   DIM DS$(N1)
LY 16130   DIM W$(N4)
EP 16140   DIM H$(N4)
QV 16150   DIM I$(N44)
WM 16160   DIM T$(N44)
KW 16170   DIM B$(N40)
RL 16180   DIM L1$(N50),L2$(N50),L3$(N50)
JB 16190   B$="
                 "
HI 16200   L1$="+-----------------------------
   --------------------------+"
ZT 16210   L2$="|
                             |"
OH 16220   L3$="|-----------------------------
   --------------------------|"
HZ 16230   SDMCTL=559
CU 16240   DL=560
TP 16250   DLB=1536
AS 16260   SAVMSC=88
UD 16270   SCRNMODE=87
TW 16280   CURS=752
WJ 16290   LMARG=82
XU 16300   RMARG=83
DQ 16310   CH=764
GX 16320   TC=708
XA 16330   BC=710
FI 16340   CL=709
WV 16350   ERCOL=54
NG 16360   BP=N1
ML 16370   ND=N0
KF 16380   OUT=N0
GZ 16390   STAGE=N0
LF 16400   LINESUM=N0
EZ 16410   MLPP=70:REM MAX LINES/PAGE
DU 16420   MRPI=22:REM MAX LINES/INSERT
IM 16430   HL=N5:REM # BL. LINES PAGE TOP
HA 16440   DPP=N0:REM N1= ONLY 1 DIR PER
   PAGE
PO 16450   LNDIR_FL=N0:REM N1= PRINT DIR
   FILES IN MIN # LINES
JS 16460   LNINS_FL=N0:REM N1= PRINT INS
   FILES IN MIN # LINES
VG 16470   IF (MLPP<MRPI+N11+HL) OR MLPP>
   70 OR MRPI<N10 OR MRPI>N44 OR HL<N0 OR
    HL>N10
CB 16480     CLS
JD 16490     POSITION N2,N8
GV 16500     ? "PAGE FORMAT ERROR"
QI 16510     ? "IN LINES 16410-16460"
WG 16520     POP :? :? :? :? :STOP
YL 16530   ENDIF
EI 16540 ENDPROC
JH 16550 ------------------------------
JL 16560 ------------------------------
VZ 17000 PROC SETUP_DLS
NW 17010   RESTORE 17100
GP 17020   FOR I=1536 TO 1636
IB 17030     READ D:POKE I,D
FP 17040   NEXT I
PY 17050   RESTORE 17300
IR 17060   FOR I=1752 TO 1791
IR 17070     READ D:POKE I,D
GF 17080   NEXT I
AA 17090   REM DATA FOR DEFAULT SCRN DL
CE 17100   DATA 112,112,112,71,216,6
OM 17110   DATA 112,112,66,0,0
PG 17120   DATA 2,2,2,2,2,2,2,2,2,2
PK 17130   DATA 2,2,2,2,2,2,2,2,2,2
IZ 17140   DATA 65,0,6
OL 17150   REM DATA FOR DISPLAY SCRN DL
EJ 17160   DATA 112,112,112,70,236,6
FQ 17170   DATA 66,0,0
HK 17180   DATA 2,2,2,2,2,2,2,2,2,2,2
HO 17190   DATA 2,2,2,2,2,2,2,2,2,2,2
YF 17200   DATA 65,34,6
US 17210   REM DATA FOR WORKING SCRN DL
CP 17220   DATA 112,112,112,71,216,6
UL 17230   DATA 112,112,66,0,0,2,2
OI 17240   DATA 112,2,2,2
OM 17250   DATA 112,2,2,2
OQ 17260   DATA 112,2,2,2
VW 17270   DATA 112,2,2,2,2
EE 17280   DATA 65,68,6
AS 17290   REM DATA FOR DEF SCRN TITLE
RJ 17300   DATA 0,36,41,51,43,0
HW 17310   DATA 41,46,36,37,56,0
FE 17320   DATA 53,52,41,44,41,52,57,0
MV 17330   REM DATA FOR DISP SCRN TITLE
KE 17340   DATA 0,38,41,44,37,51,0
HB 17350   DATA 47,46,0,52,40,41,51,0
WF 17360   DATA 36,41,51,43,0
EQ 17370 ENDPROC
JP 17380 ------------------------------
JT 17390 ------------------------------
FW 17500 REM FILENAME DATA FOR SEL SORT
KI 17510 DATA 4
WQ 17520 DATA DOS      SYS
YE 17530 DATA DUP      SYS
TM 17540 DATA AUTORUN  SYS
NE 17550 DATA AUTORUN  BAS
```

CLAPTON ... KNOPFLER ... YOU?

Could your Atari help you become the next guitar superhero? John S Davison has been trying out Guitar Wizard a package that might just set you on the road to stardom

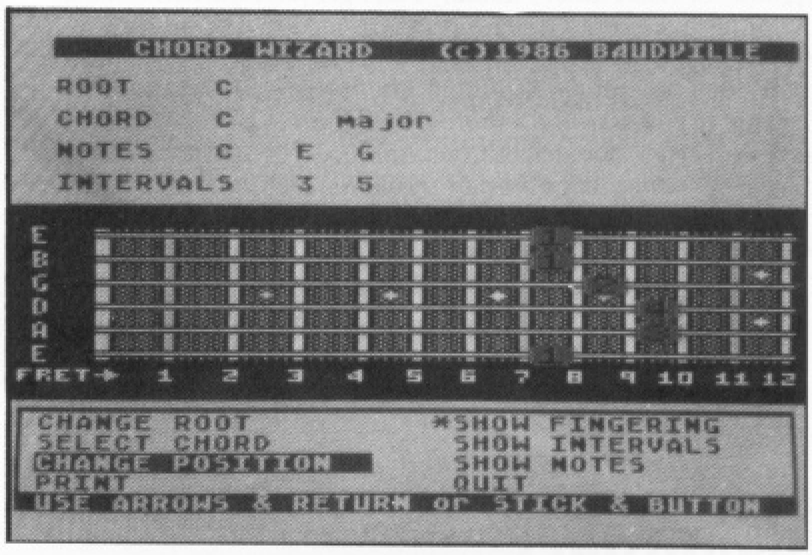
New music related programs for the 8-bit machine are as rare as hen's teeth these days, so I was delighted to receive Guitar Wizard for review. Although new to me it's actually been around since 1986 in the USA, and thanks to Micro Discount it's now available in the UK. To run it you'll need an 8-bit machine with at least 48K memory, a disk drive, and optionally a joystick.

Guitar Wizard's purpose is to help guitar players learn fingerings of chords, scales, and intervals; and for matching scales with chords for improvisation. It's not intended for the guitar novice - don't expect it to teach you to play from scratch, because it won't. However, once you have some basic knowledge and skill with the guitar it could help speed up further progress. The program is divided into four sections, one for each of the basic functions mentioned above. All are extremely easy to use and understand, mainly because of the common screen layout used throughout and the simple menu driven user interface.

The top third of each screen carries basic information about the current function, for instance for a chosen chord it displays root note name, chord name, names of notes in the chord, and note intervals.

The middle third of the screen shows a "guitarist's eye view" of the fretboard, with the six strings (each marked with its current tuning) and twelve frets. "Finger spots" are overlaid on this to show finger positions required to obtain the required notes in the chosen chord, scale, or interval. Depending on the option chosen these are marked with finger numbers (showing which fingers to put where), note names (telling you what the notes are), or intervals (relative to the root of the chosen chord or scale).

The bottom third of the screen holds the menu from which the function's options may be chosen, for instance whether to display fingerings, notes, or intervals; to change chord root or type; or to print out the currently displayed screen. You just make choices using arrow keys or joystick - it really couldn't be much easier to use.



GUITAR WIZARD
Baudville
Available from Micro Discount
£10.95

CHORDS GALORE

The first section, Chord Wizard, is designed to show you recommended fingerings for a wide range of chords, 32 for each root note to be precise. Virtually every chord you could want is here - if it isn't you should be able to construct it from the knowledge the program has already given you. It goes further though - it can also show you the fingerings for the same chords in eight alternative positions on the fretboard, modifying the fretboard display to show up to the fifteenth fret where necessary.

Scale Wizard performs a similar task for scales, the top third of the screen now showing the scale root, scale name, names of notes in the scale, and scale intervals. It covers nineteen different scale types for each of the twelve root notes in an octave including, in addition to the expected majors and minors, such gems as whole tone, pentatonic, blues, and half diminished scales, plus all the old modes (Ionian, Locrian, Aeolian, etc.). That's a pretty comprehensive selection!

Fretboard Wizard is a sort of "fretboard calculator". You can ask it to display the fingering positions for notes in any chord, or scale, or interval across the whole fretboard at once. The display looks very complicated with dozens of finger spots shown simultaneously, but could be very valuable for the more expert guitarist trying to work out the best way of playing long scales or runs. Another advanced feature is the program's

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RIGHT TO THE END

DROPZONE and DRACONUS DEFEATED

If you have Dropzone, you'll probably agree that it's one of the best games ever written for the Atari 8-bits. If you don't have it, shame on you - try and get it if you can. Although the graphics are stunning and it's fun to play, I think it's far too difficult. All you get is 3 lives, 3 bombs and 15 seconds of cloak time. I usually can't get past the 3rd level, so the other day Steve Whiteley and I decided to find out how the lives were initialised in the game and give ourselves a lot more than the 3 we had been allotted. We succeeded and then decided to give ourselves more bombs and to be really greedy, gave ourselves more cloak time! After we'd finished we decided to give ourselves more lives in Draconus also, which Steve has been unable to complete on the 3 lives you get with it. If you want to cheat at your own games of Dropzone and Draconus, read on.

THANKS TO HARVEY

In Issue 29 of Page 6 Atari User, you'll find an article written by the HAWKQUEST co-author, Harvey Kong Tin entitled "Zapping The Right Byte". This is what made us decide to have a go at cheating at Dropzone as it wasn't on the list of games Harvey had cheated at, and this is the story of how we did it. You'll need a pop-up Machine Language Monitor like Supermon in your computer to modify games yourself, but I think Ultimon or Omnimon are much the same thing in England. Later on we'll tell you how to modify the sectors concerned on your Dropzone and Draconus disks, but for now we'll explain how we did it. Some knowledge of Machine Language is needed!

LOOKING FOR LIVES

Harvey Kong Tin says that most commercial game programmers load the accumulator with the number of lives required. This is LDA #$03 or LDA #$02, etc., although sometimes they can use LDX or LDY to initialise lives in a game. If you load Dropzone in the normal manner and then jump into Supermon, you will need to know a few things about the game first, like where it loads into memory and finishes, and most importantly, what the Run address is so you can re-run the game after you modify a byte and see what happens. You can do it with a sector editor on disk, but this will take you all week to track down the right byte! The Start address of Dropzone is $2F80 and the End address is $B9C6. The Run address is $3029. Knowing this, we can now look for any LDA #$03 instructions which appear as A9 03 in the memory that Dropzone is residing in, so <F>ind A9 03 from 2F80 to B9C6 and shock, horror, you'll find that there are 20 locations with these bytes. We changed every one, but alas, no extra lives. Next we tried A9 04 and found 5 locations, but none of these were the right ones either. Ditto with LDX #$03 (A2 03) which had 6 locations, and LDX #$02 (A2 02) which had 7 locations. This was getting tedious. Finally we tried LDA #$02 (A9 02) and found 24 locations! Groan. But luck was with us as the very first byte we changed was the right one, hooray. This is at $30DD where the value of $02 is stored into $05AC. If you look at 5AC you will find nothing there! That's because the game hasn't been initialised yet, so go back and start the game first then jump back into Supermon and look at 5AC again. Now you'll see there is a 02 here, run the game again and let yourself be killed, then back into Supermon and look at 5AC again. It's on 01 now, so this is the location where your lives are initialised.

GIMME SOME BOMBS!

After success with the lives, we decided to find out how to give ourselves more bombs. If you look at location 30DD again you will see that the next LDA instruction stores a $03 into $05AD so if you look at 5AD you will indeed find there is a 03 here. Wow. So run the game again and use a bomb, then back to Supermon and look at 5AD. It's on 02 now, so this is the location where the bombs are initialised. Great stuff. Now we decided to get really greedy and look for the routine that handles the amount of cloak time given. The cloak lasts for 15 seconds in the game before being exhausted.

We looked for a routine that checked if any key was pressed, which usually is LDA $2FC (AD FC 02), and found 3 locations. $34DE is the routine that pauses the game when the ESC key is pressed, and location $5E08 checks for the SPACE bar (bombs) and also any other key pressed. We never checked the third location, as we had found what we wanted. We then noticed a routine to check location $5AB (LDA #$5AB) just after the routine at $5E08. So we decided to <F>ind a routine that would STA $5AB (8D AB 05), and there it was as plain as day at location $5DEC, and checking back a couple of bytes (location $5DEA), we found the routine LDA $18, STA #$05AB (A9 18 8D AB 05).

We changed A9 18 (LDA #$18) to A9 FF (LDA #$FF) and gave ourselves 163 seconds of cloak time but then found the game

Mal East and Steve Whiteley have discovered how to change the disks to get much further into these games and now share their secrets with you

didn't like being changed as it upsets the end of level message, so I'd advise you to leave this one alone, but giving yourself 256 lives and 256 bombs doesn't bother the game at all.

TIME TO ZAP THE DISK

Okay, enough of the technical stuff, this is how to change your disk. A word of caution though. Before you change anything, write down the sector number and the original value of any bytes you alter and please don't blame me or Steve if you stuff anything up! You can use Supermon or if you prefer a sector editor, load one that can look for a byte string on disk, then insert your Dropzone disk and look for the following byte string in Hex:

20 04 86 A9 02 and change it to - **20 04 86 A9 FF** for 256 lives

If you're greedy, look for:

8D AC 05 A9 03 and change it to - **8D AC 05 A9 FF** for heaps of bombs

Actually, you'll find these bytes in the same sector as the lives, right at the beginning of the disk in track $00.

If you're *really* greedy, look for:

48 B0 F8 A9 18 and change it to - **48 B0 F8 A9 FF** for 163 seconds of cloak time

LET'S TRY DRACONUS

After giving Dropzone a working over, we then loaded Draconus and looked for the same byte string of A9 02 from 1480 to BAFF. We found 15 locations but struck it lucky on the first one. Change location 4260 to FF if you want to try it and Run from 3F80. To change your disk, look for the byte string of:

E8 3F F8 A9 02 and change it to **E8 3F F8 A9 FF** for 256 lives

You should find this sector in track $07.

That's about it for the "software" hacking, so load up your new cheat disk and see what the higher levels in Dropzone look like, and see if you can finish Draconus. Use the solution supplied by Johnathon Simpson in issue 39 if you need to.

FANCY A TRIP TO GERMANY?

Derek Fern has received details of a major Atari 8-bit show (Messe) to be held in HANAU (presumably Germany) on 21st August 1993 and wonders whether there would be enough interest to arrange a coach trip over there.

No firm details yet but if you are interested give Derek a ring on ***021 353 5730*** *- if there is enough response the trip may well be arranged*

Guitar Wizard continued

ability to help you explore alternative string tunings. Instead of using traditional tuning you can set each string to any pitch you wish. The program will then show you chord fingering positions based on this. You could also use the feature to help you learn to play other stringed instruments which don't use standard guitar tuning.

Finally there's Improvisation Wizard. This lets you choose a root note and chord type and it then recommends scales on which you can successfully base a matching improvisation. This could be a great help if you're composing or looking into improvisation patterns for rock, jazz, or other types of music.

TOTAL SILENCE!

Guitar Wizard includes some excellent features, but there's one major omission. Unbelievably, it makes NO use of sound! The 8-bit machines have four sound channels, so why the heck didn't the author use them for aurally demonstrating scales and chords? Perhaps it's because the sound chip tuning isn't 100% accurate? Who knows?

Apart from this one niggle Guitar Wizard is an excellent, high quality product. I was particularly impressed by its ease of use, in fact I think it's actually easier and quicker to use than books on the subject, a rare situation indeed! And at £10.95 it costs less than a decent tutor book or even an hour's tuition from a guitar teacher. So, if you're into guitar playing and are serious about improving your skills make sure you check it out. It could help turn YOU into a Guitar Wizard!

HIGHLIGHTER

by Phillip Beattie

Highlighter is a short machine code program that will 'highlight' the current line of text in a Graphics 0 screen. This makes it easier to find the cursor among a screenful of basic or whatever text is displayed.

The line is highlighted by placing a blank scan line above and below the cursor. The only way that this can be achieved effectively is to use a Vertical Blank Interrupt to rewrite the Graphics 0 Display List every Vertical Blank and to place the blank scan lines in the correct places. This is what is called a Dynamic Display List, that is one that changes according to the current state of the computer.

The VBI is stored at 1547 onwards and the DL is stored from location 1700 onwards. All you have to do to see it in action is type in the Basic program and save it just in case you make a little slip in typing in a few of those numbers. Now run it and you should see the effect. Pretty neat huh? It will remain until you press Reset and if you do it can be retrieved by just typing ?USR(1536) and it will appear again.

I have also supplied the assembly language listing which I am sure that you machine code programmers can improve on and come up with other similar ideas using Dynamic Display Lists.

Your programs and screen text will be much easier to check with this neat little utility

```
CS 1 REM ##################################
TS 2 REM #          HIGHLIGHTER           #
VJ 3 REM #       by Phillip Beattie       #
SF 4 REM # ------------------------------ #
AT 5 REM #  NEW ATARI USER - JUN 1993     #
CX 6 REM ##################################
NM 7 REM
FS 10 FOR B=0 TO 148:READ A:POKE 1536+B,A
   :NEXT B
MC 20 ? USR(1536)
WR 21 NEW :REM MAKE SURE YOU HAVE SAVED M
   E
HE 99 DATA 160,11,162,6,169,7,32,92,228,1
   04,96,162,0,160,0
BF 100 DATA 169,112,141,164,6,141,165,6,1
   69,80,141,166,6,169,0,197,84,208,32
OK 110 DATA 157,167,6,232,169,66,157,167,
   6,232,165,88,157,167,6,232,165,89,157,
   167,6,232,169,0,157,167,6,232
GF 120 DATA 200,76,85,6,169,66,157,167,6,
   232,165,88,157,167,6,232,165,89,157,16
   7,6,232,200,196,84,208,22,169,0
QJ 130 DATA 157,167,6,232,169,2,157,167,6
   ,232,169,0,157,167,6,232,200,76,118,6,
   169,2,157,167,6,232,200,192
NX 140 DATA 24,208,219,169,65,157,167,6,2
   32,169,164,157,167,6,141,2,212,232,169
   ,6,157,167,6,141,3,212,232,76,98,228
```

VIDEO TITLE SHOP

There is only one commercial program available for the Atari Classic to add titles to your video presentation, but is it any good?

Do you own a video camera? Are you fed up with hours of unending footage? Could you use something that would give your home movies a bit of life? Maybe you should give Datasoft's VIDEO TITLE SHOP a try.

VIDEO TITLE SHOP comprises two programs and a graphics package on three double sided disks with two manuals and a quick reference card. To get the most out of the package you need a 64K ATARI, disk drive, VCR and viewing screen. The package is designed to give a video titling facility, where text is superimposed on backgrounds, either blank or pictures created using the supplied "Micropainter+" art program. Titles may be scrolled, wiped, fizzled, cycled, painted and then faded away. By chaining together pictures in sequence simple animation may even be created. What the program will not do is superimpose titles onto a video background. That requires a piece of hardware called a Genlock, and as far as I am aware there isn't one yet available for the 800/130 series, but I live in hope!

So what is it like to use? Well, once the disk is booted up you are presented with a fairly impressive title screen, created using both the supplied art and titling programs. Commands are simple and are entered via the keyboard and/or joystick. The quick reference card is especially useful here as the list of commands is quite extensive. The supplied manuals take you through the various stages, eventually producing for you in the form of a demo, examples of all the facilities provided in the program. Backgrounds, border styles and fonts may be loaded in from disk. There are 25 backgrounds, 5 border styles and two fonts supplied on the "Graphics Companion 1", which takes up two of the three disks. You may also be able to use backgrounds from other sources as pictures are stored as 62 sector files. I know this to be true as I have used "Print Lab" pictures and vice versa. The program may be further enhanced by obtaining a copy of the "Graphics Companion II", which contains more pictures, borders, fonts and clip art.

Sounds too good to be true? Well it does have it's problems. The program has a tendency to lock-up, infuriating when creating long sequences. Also, backgrounds may only be in 4 colours with the titles using these same four colours, so great thought is needed when planning your screens. The process of creating sequences that can be loaded in from disk is very messy indeed, not helped by the format of the instruction manuals, though it's not impossible.

What about the results? I can only say brilliant! I have been using this program for over a year now and have achieved some excellent results. This is a piece of software crying out for serious use. It certainly isn't a budget program but gives outstanding results at a budget price. All I can say is buy it. You won't regret it!

Video Title Shop is available from Micro Discount and Gralin International.

We would like to give due credit for this review but the contributor forgot to give us his name. The disk came from RAF Bruggen and we probably should know who it is but can't remember. Perhaps there is a security blackout that prevents us from identifying the author!

Source code for HIGHLIGHTER

```
10       ;              TEXT HIGHLIGHTER
20       ;              A DYNAMIC DISPLAY LI
   ST
30       ;              BY PHILLIP BEATTIE
40         *=  1536
50         .OPT OBJ
60 SETVBV =  58460
70 ROWCRS =  84
80 XITVBV =  58466
90 DLISTL =  54274
0100 DLISTH = 54275
0110 SAVMSCL = 88
0120 SAVMSCH = 89
0130     ;              INSTALL VBI
0140     LDY #11
0150     LDX #6
0160     LDA #7      ;DEFERRED VBI
0170     JSR SETVBV
0180     PLA
0190     RTS
0200     *=  1547
0210     LDX #0
0220     LDY #0
0230     LDA #112    ;8 BLANK SCAN LINES
0240     STA 1700
0250     STA 1701
0260     LDA #80     ;6 BLANK SCAN LINES
0270     STA 1702
0280 CURSOR_AT_TOP?
0290     LDA #0
0300     CMP ROWCRS
0310     BNE TOP_LINE
0320     STA 1703,X  ;1 BLANK SCAN LINE
0330     INX
0340     LDA #66     ;GR.0 + LMS
0350     STA 1703,X
0360     INX
0370     LDA SAVMSCL ;GET LOW BYTE OF SCR
   EEN MEMORY
0380     STA 1703,X  ;AND PLACE IT AFTER
   THE LMS INSTRUCTION
0390     INX
0400     LDA SAVMSCH ;DO SAME FOR HIGH BY
   TE
0410     STA 1703,X
0420     INX
0430     LDA #0      ;1 BLANK SCAN LINE
0440     STA 1703,X  ;LINES INSERTED
0450     INX
0460     INY
0470     JMP CURSOR_AT_LINE?
0480 TOP_LINE
0490     LDA #66
0500     STA 1703,X
0510     INX
0520     LDA SAVMSCL ;GET LOW BYTE OF SCR
   EEN MEMORY
0530     STA 1703,X  ;AND PLACE IT AFTER
   THE LMS INSTRUCTION
0540     INX
0550     LDA SAVMSCH ;DO THE SAME FOR THE
    HIGH BYTE
0560     STA 1703,X
0570     INX
0580     INY
0590 CURSOR_AT_LINE?
0600     CPY ROWCRS
0610     BNE NORMAL_LINE
0620 CURSOR_AT_LINE
0630     LDA #0      ;1 BLANK SCAN LINE
0640     STA 1703,X
0650     INX
0660     LDA #2      ;1 GRAPHICS 0 LINE
0670     STA 1703,X
0680     INX
0690     LDA #0      ;1 BLANK SCAN LINE
0700     STA 1703,X
0710     INX         ;LINES INSERTED
0720     INY         ;AND ANOTHER DISPLAY
    LINE COMPLETED
0730     JMP FULL_SCREEN?
0740 NORMAL_LINE
0750     LDA #2
0760     STA 1703,X
0770     INX
0780     INY
0790 FULL_SCREEN?
0800     CPY #24
0810     BNE CURSOR_AT_LINE?
0820 COMPLETE
0830     LDA #65     ;DL JUMP AND WAIT FO
   R VBLANK INSTRUCTION
0840     STA 1703,X
0850     INX
0860     LDA #164
0870     STA 1703,X  ;TELL DL LOW BYTE OF
    NEXT DL
0880     STA DLISTL  ;TELL ANTIC LOW BYTE
    OF DL LOCATION
0890     INX
0900     LDA #6
0910     STA 1703,X  ;TELL DL HIGH BYTE O
   F NEXT DL
0920     STA DLISTH  ;TELL ANTIC HIGH BYT
   E OF DL LOCATION
0930     INX
0940     JMP XITVBV  ;EXIT FROM VBLANK RO
   UTINE
```

Ian Finlayson's

TUTORIAL TIME

30 SECONDS AND COUNTING

In the last issue I talked about using the Atari clock for timing answers in a multiple choice quiz. I did not explain carefully enough, however, and so I have been asked to help again to get the timing system working.

The fundamental problem with timing in Basic is that although the timer keeps running all the time, the display is only updated when you read the timer and update the display. In order that the time display is updated constantly there must be repeated calls to read the timer and print the result on screen. If your program stops and waits the display of the timer will stop also. This means that you cannot use GET or INPUT functions as both of these wait for a key press, so if you don't press a key the clock seems to stop and then when you finish thinking and type your answer the displayed clock will jump to the new time.

To give an example of what I mean I am using a simple addition test program based on a concept by Paul Robinson. I will not explain the program step by step, but have drawn an overall flow chart of the program in figure 1. If you follow round the program flow in this figure you will see that none of the paths iterate very quickly. The shortest loop is the "Try Again" loop when you get the answer wrong. This means that if we put a timer anywhere in the main program flow it will update very infrequently. We have to find an alternative.

The answer lies in that part of the program where we get input from the keyboard. User input is the slowest part of the program - the computer has little to do but wait while you think about which key to press. In the main flowchart this is the box labelled "Get No of Key Inputs". In this box if the program uses a GET or INPUT the computer can only sit and wait as I said earlier, but it is possible to use this waiting time more constructively to achieve our timing requirements.

Look at figure 2. This is a simple flow chart of the "Key-in" sub routine (lines 1500 to 1610 of the program), which is where the key input actually occurs. This subroutine is repeated for each character of the answer, so it may repeat once or twice (once for 0-9 and twice for 10-17 and -1 to -7, no other answers are possible). What is happening is a continuous loop which scans to see if a key has been pressed, then reads the timer and updates the time display on screen. This loop iterates very quickly so the time is updated smoothly - the program only breaks out when it detects a key press. It then converts the keycode to the equivalent number (0 to 9) and returns with that value to the main program.

There is a slight complication in the "key-in" subroutine - because it is possible for the answer to be negative we have to allow for input of a minus sign (-) as the first character of the answer. This is done in line 1505, and it sets the variable MINUS to 1 so that the first character in the answer is made a minus sign (line 330).

Having a clock running also allows the scores to depend on

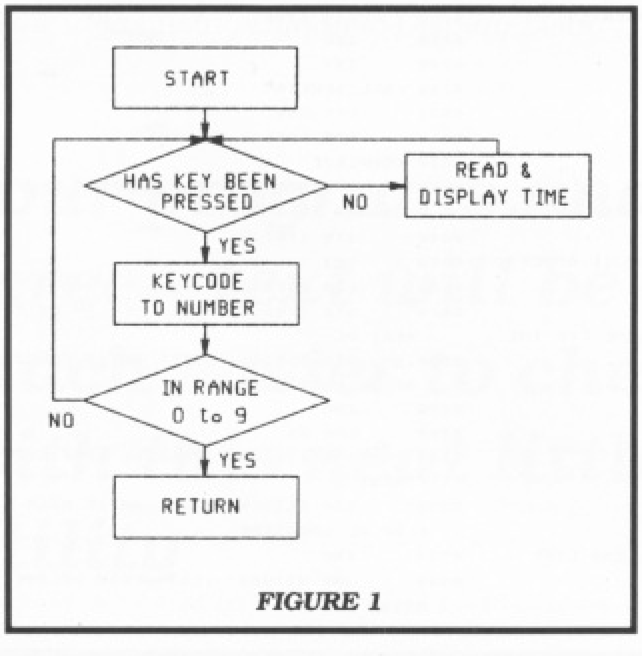


FIGURE 1

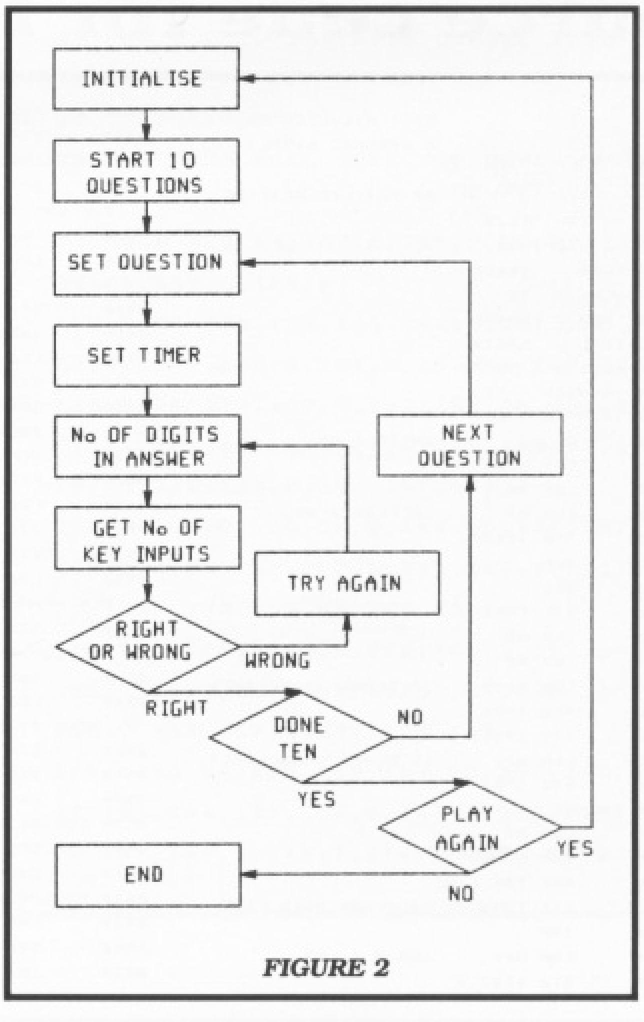


FIGURE 2

```
WO 1 REM ******************************
CR 2 REM *    TUTORIAL SUBROUTINES    *
XU 4 REM * SUMS WITH COUNTDOWN TIMER  *
XU 5 REM *            by              *
CO 6 REM *      Ian Finlayson         *
OG 7 REM *----------------------------*
OW 8 REM * NEW ATARI USER - JUN 1993  *
WW 9 REM ******************************
AY 10 REM
UZ 59 REM *** INITIALISE
AI 60 RESET=2000:KEYIN=1500:LOOKUP=2020:R
   IGHT=1000:WRONG=1050:KEYPRESS=1700:T=3
   0
DP 70 DIM NAME$(10),L$(5)
HM 79 REM *** SETUP SCREEN
MV 80 GRAPHICS 17:SETCOLOR 0,1,6:SETCOLOR
    2,12,8:SETCOLOR 4,0,10:S=0:Z=0
RN 84 REM *** START 10 QUESTIONS
CF 85 S=0:FOR Z=1 TO 10
MN 87 TRY=0
ME 90 POSITION 2,3:? #6;"SCORE ";S
QA 100 POSITION 12,3:? #6;"TIME "
PX 130 W=INT(RND(0)*9)+1
QE 140 X=INT(RND(0)*9)+1
QL 150 Y=INT(RND(0)*9)+1
NM 160 POSITION 5,10:? #6;W;"+";X;"-";Y;"
   ="
JG 170 A=W+X-Y
NY 190 GOSUB RESET
GZ 200 POSITION 6,20:? #6;"SUM NO ",Z
OE 210 POSITION 13,10:? #6;"?   "
CR 220 TRY=TRY+1
TX 249 REM *** HOW MANY DIGITS?
EV 250 D=1
QD 260 IF A>9 THEN D=2
MD 280 IF A<0 THEN D=2
SS 299 REM *** GET D KEY INPUTS
RY 300 MINUS=0:L$=""
YQ 310 FOR N=1 TO D
MF 320 GOSUB KEYIN
FE 330 IF N=1 AND MINUS=1 THEN L$(1,1)="-
   ":? #6;"-";:GOTO 350
VP 340 L$(N,N)=STR$(IN):? #6;IN;
IB 350 NEXT N
GV 370 IF A=VAL(L$) THEN GOSUB RIGHT:GOTO
    390
QE 380 GOSUB WRONG:GOTO 210
MZ 390 NEXT Z
YQ 400 GRAPHICS 17
CX 410 POSITION 2,3:? #6;"WELL DONE..."
CW 420 POSITION 2,5:? #6;"A SCORE OF ";S
YM 430 POSITION 2,7:? #6;"PLAY AGAIN? (Y/
   N)"
UK 440 OPEN #1,4,0,"K:":GET #1,K:CLOSE #1
JY 450 IF K=75 OR K=89 THEN RUN
OF 460 END
```

```
FM 999 REM *** CORRECT ANSWER
RF 1000 ADD=10-2*(TRY-1)-INT(SEC/3):IF AD
   D<0 THEN ADD=0
DY 1010 S=S+ADD
KY 1020 POSITION 2,15:? #6;"CORRECT ANSWE
   R "
HB 1022 FOR DELAY=1 TO 300:NEXT DELAY
QR 1025 POSITION 0,10:? #6;"
   "
TM 1030 POSITION 0,15:? #6;"
   "
UH 1040 POSITION 0,16:? #6;"
   "
BF 1045 RETURN
FD 1049 REM *** WRONG ANSWER
KN 1050 POSITION 2,15:? #6;"WRONG ANSWER
   "
UZ 1060 ? #6;:? #6;"  TRY AGAIN    ":FOR
   DELAY=1 TO 300:NEXT DELAY
UD 1062 POSITION 0,15:? #6;"
   "
VD 1064 POSITION 0,16:? #6;"
   "
AU 1070 RETURN
PR 1499 REM *** KEYIN
PG 1500 GOSUB LOOKUP:KEYP=PEEK(764):IF KE
   YP=255 THEN 1500
MK 1502 IN=-1
JQ 1505 IF KEYP=14 THEN IF N=1 THEN MINUS
   =1:GOTO 1610
YM 1510 IF KEYP=50 THEN IN=0
ZB 1520 IF KEYP=31 THEN IN=1
ZO 1530 IF KEYP=30 THEN IN=2
DO 1540 IF KEYP=26 THEN IN=3
DM 1550 IF KEYP=24 THEN IN=4
HL 1560 IF KEYP=29 THEN IN=5
HJ 1570 IF KEYP=27 THEN IN=6
GP 1580 IF KEYP=51 THEN IN=7
IV 1590 IF KEYP=53 THEN IN=8
LE 1600 IF KEYP=48 THEN IN=9
VW 1605 IF IN=-1 THEN 1500
BS 1610 POKE 764,255:RETURN
WM 1699 REM *** KEYPRESS
HR 1700 OPEN #1,4,0,"K:":GET #1,K:CLOSE #
   1:RETURN
JM 2000 POKE 18,0:POKE 19,0:POKE 20,0:RET
   URN
TA 2019 REM *** READ TIMER
FS 2020 JIF=PEEK(18)*65536+PEEK(19)*256+P
   EEK(20)
PI 2030 SEC=INT(0.5+(JIF/50))
WP 2040 IF SEC<>SECOLD THEN POSITION 17,3
   :? #6;"   ":POSITION 18,3:? #6;(T-SEC)
   :POSITION 2,17:SECOLD=SEC
BM 2050 POSITION 12+N,10
AS 2060 RETURN
```

how fast the questions are answered. If you look at line 1000 you will see how I have calculated the variable ADD. ADD is the score from the current question which is added to the total score S. The maximum is 10 but with a reduction of 2 for each wrong answer and one less for every three seconds delay in answering. Just in case you take a very long time to answer or have more than 5 attempts at the answer the line goes on to set the minimum value of ADD to zero, so you do not get negative points!!!

I hope this second look at the use of a timer in a program is not too boring for all you quick people who understood perfectly first time - at least there is the basis of a mathematical test program for you to get your teeth into. Addition, subtraction and multiplication are all fairly easy as you can guarantee whole number answers, if you want more of a challenge try division - the exact answer can have many decimal places, or (like division by three) may have an infinite number of decimal places so how will you check for a correct answer? One method would be to look up questions from a data table (like the quiz in the last issue but with mathematical instead of verbal questions), but this would limit the questions to a predefined set instead of the infinite variety generated from a random method like the one used here. Perhaps it would be better to ask for accuracy to a specified number of decimal places ... I leave you to decide.

For those who were left a little puzzled by the introduction to timing in the last issue I hope this makes everything clear. Please write to me if you are still in doubt and can not make the timer in your program work. As always my address is

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THE LAST XLENT WORD PROCESSOR?

A new word processor is a rarity but there are still good ones to be had. Paul Rixon looks at one that has just been re-released by a German company

After their formation at the PCW show of 1986, XLent Software (UK) went on to launch a useful selection of printer-related utilities. Although sadly the company isn't active today, Ke-Soft of Germany have acquired the rights to distribute their existing products. David Castell's First XLent Word Processor is among these and, some would argue, one of the best.

The original XLent release was furnished with an instruction manual of 56 pages (admittedly these were not particularly well laid out) but Ke-Soft have seemingly decided that 7 sides of A4 will suffice. Mine were also written in German but Ke-Soft have assured me that British customers will receive the English translation! I'm not sure that this level of information will be adequate but, fortunately, the program's user interface is not difficult to comprehend and there are four screens of in-built help. As with most software, the best way to learn is to press some buttons and see what happens!

The program's primary edit screen comprises a twenty-line text editing area surrounded by a tabs line above and four lines below set aside for commands, prompts and messages. In the bottom right hand corner there are six icons which can be used to select the print, cut, paste, search and disk utility functions. By pressing ESC or the joystick trigger whilst in edit mode, the icon selection process is enabled. At almost all other times the ESC key operates as an abort facility. Most of the editing keys act as you'd expect - insert, delete, cursor movement etc. - while less frequently accessed commands are available via Shift/Control key combinations. These include the valuable ability to place five markers in the text which can then be located with a rapid 'goto' command. Most options that ask the user a question have a sensible default answer that can simply be chosen by pressing Return - the general aim is to make user selections as friendly and effortless as possible. You can also modify various parameters to suit your personal preference - text and background colours, cursor type, insert or overwrite mode, joystick or keyboard input for cursor movement, key repeat rate and joystick response speed.

The cut and paste facility is limited to a single screen of text with each operation. This can be a bit frustrating though an unusual feature is that you can edit the contents of the cut text buffer before pasting it back into place. You could also use it to create a new piece of text and copy this into several parts of your document. You can copy, cut and paste between two different documents using the program's dual window mode. The available memory is divided into two parts so that a document may be loaded and edited in each. You can't see both documents on screen simultaneously but you can swap between the two with a straightforward key press. The cut and paste buffer is shared between the two sections. At any stage you can quickly check how much memory remains and also determine how much space the document will occupy when saved onto disk. Disk Utilities include directory, load (using append, insert or normal methods), save, delete, format disk and spool. The latter option lets you view a saved document without actually loading it into memory - a convenient function that is often overlooked.

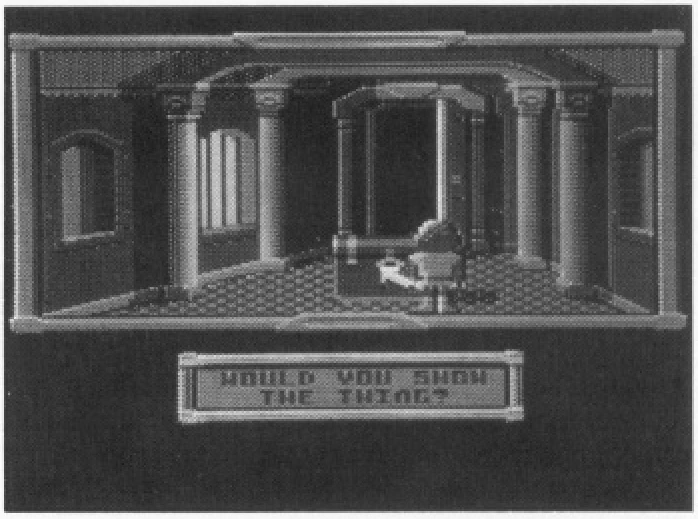
Preparing your text for output involves placing format control codes in the document itself. With these you can set margins, page size, page ejects, spacing, centring, justification, headers, footers, indents, page numbering and similar effects. You can also embed printer control codes in the text to handle the special features of your printer. A printer driver construction set is provided so that almost any type of printer can be used, providing you know the relevant codes. You can output text to printer, screen or disk with single or double columns. Double column mode is great for producing newsletters, and with a little experimentation (and an Epson compatible printer) you can even attach 62 sector uncompressed picture files to liven up the page. If you have a 130XE you can invoke a print spooler facility that lets you carry on typing while the document is printed. It works - albeit rather slowly and not without the occasional glitch. The screen output, or preview function, is created using an 80 column character display with special small characters. It's very handy for checking on the finished page layout before printing - not to mention being environmentally conscious!

Apart from lacking a spell checker, The First XLent Word Processor is without major fault. With the notable exceptions of Superscript and Paperclip, the program is more than a match for other word processors you'll find for the 8-bit Ataris. It's fully featured, fast and friendly, as they say. At the price Ke-Soft are asking, it's also a very good bargain!

Write to Ke-Soft at Frankenstrasse 24, 6457 Maintal 4, Germany who supplied the review copy. The program may also be available from Micro Discount.

Title:	**THE FIRST XLENT WORD PROCESSOR**
Publisher:	**Ke-Soft**
Price:	**DM39,80**
Format:	**Disk**

THE CURSE



If you have ever bemoaned the scarcity of graphical adventures in the Atari 8-bit world you will surely be delighted to learn of Micro Discount's latest discovery. Avalon's Klatwa - or THE CURSE for those who aren't too hot on Polish - is a graphical 'point and click' adventure boasting a generous helping of objects and locations. If, like me, you're not too keen on textual adventures you may be tempted to overlook the graphical variety too - but you would be missing out on some excellent entertainment.

The background to the adventure is rather vague but it explains how your country has been cursed by the Ruler of Darkness and thereby faces the not exactly thrilling prospect of everlasting misery. Fortunately you have found the location of the Ruler's castle and now have a once-in-a-lifetime opportunity to free your country from his terrifying powers.

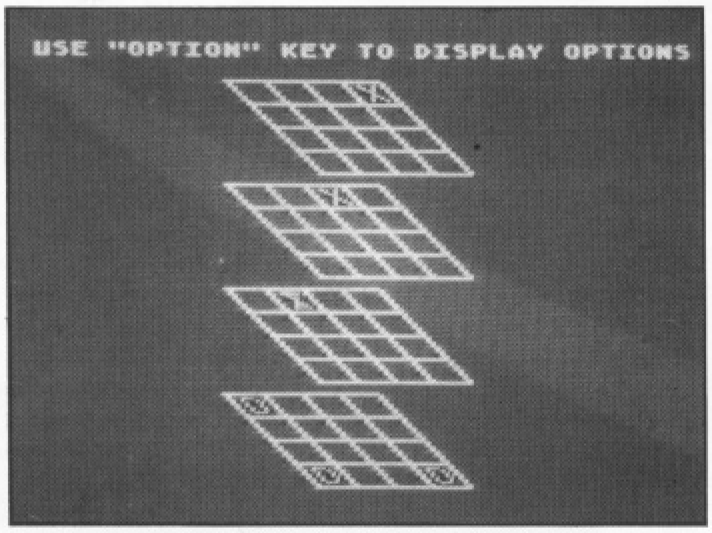
The screen view is divided horizontally into two sections. The upper portion shows your character in the various rooms of the castle while the lower part accommodates messages and prompts as required. The castle rooms are expertly drawn and shaded in a detailed 3-D perspective, by necessity at the expense of multiple colours. Using the joystick to operate a screen pointer you can select any element of each scene for closer examination. When you click the trigger a menu appears to inform you if there's anything useful at the chosen position. If some action is appropriate - such as peering through a window or opening a door - your character walks lethargically across to perform the task. Numerous objects are required to progress through the screens, though you can hold only five items simultaneously. Magic spells must also be obtained and used to overcome certain problems, but these are carried in your spell book and so don't clutter your inventory.

Thankfully this doesn't seem to be one of those adventures in which your character expires at every incorrect move. At one point you may be robbed of your magic powers and have to search for the means to restore them, but a save game feature is thoughtfully provided to relieve any frustration. The principal drawback with adventure games is that once you've solved the problems and reached the conclusion, there's nothing left to do. However, The Curse would seem to offer a sufficient quantity of puzzles and screens to hold your interest for more than a short while.

Title:	**THE CURSE**
Publisher:	**Avalon/Micro Discount**
Price:	**£5.95**
Format:	**Disk**

Reviewed by Paul Rixon

3D TIC-TAC-TOE



In the beginning, there was an Atari 400 ... shortly afterwards there was 3-D TIC-TAC-TOE from Atari Corporation. Without, of course, inferring any criticism of Atari's sales and marketing strategy (strategy?), it's interesting to note that this fourteen year old ROM-based game has only just reached general circulation here in the UK. Was it worth the wait?

Tic-Tac-Toe is the American name for noughts and crosses and you may be wondering why anyone should want a computerised version. Surely scribbling symbols on a sheet of paper is preferable to fiddling around with the joystick (and have you tried taking your computer on a picnic?). Another problem is that noughts and crosses cannot be won unless you introduce the human factor of imperfect decisions - attempting to beat the clever-old-computer may not be a lot of fun. Consequently, Atari's 3-D Tic-Tac-Toe isn't quite as straightforward as plain noughts and crosses. It's played on four 4x4 grids which are drawn at an oblique angle to generate the basic 3-D effect. As expected the object of the game is to place four X or O symbols in one horizontal, vertical or diagonal row using either one grid or all four. It may sound simple but Atari's glossy instructions stretch to six sides of A4!

You can play Tic-Tac-Toe with a human opponent, using both joysticks, or with the computerised substitute. The latter has eight difficulty settings though even the highest incorporates a degree of randomness so that winning is not impossible (just near impossible!). The computer moves quickly on level one but supposedly may ponder for twenty minutes if set to maximum playing strength - when you grow tired of waiting you can hit the Select key to force an immediate move. Start-up options include a set-up mode for experimenting with different situations and a game variation called Bottom-Up. In Bottom-Up play must begin on the lower of the four grids and a move can only be made onto a higher grid if the corresponding square below is presently occupied. The overall objective doesn't change.

Graphics? We're talking about 1970's software don't forget! Sound? I definitely heard a beep. Okay, so it's not exactly oozing with hi-tech features but the game itself is not at all unplayable, especially in two player mode. When you get tired of zapping baddies, Tic-Tac-Toe might provide a welcome respite.

3D Tic-Tac-Toe is available from Micro Discount

Title:	**3D TIC-TAC-TOE**
Publisher:	**Atari Corp.**
Price:	**£10.95**
Format:	**ROM**

Reviewed by Paul Rixon

contact ... contact ... contact ... contact

FOR SALE

8-BIT VARIOUS: 1010 Data Recorder, £9; ICD Printer Connection, £15; Printshop with data disks boxed, £20; Newstation, £10; Page Marshall, £10; Assembler Editor cartridge, £10; Assembler Book, £5; XL Handbook, £4; 1027 printer (not printing correctly), £25 o.n.o.; Mini Office II, £9. All inclusive postage. Telephone 0837 53870 before 6.30 pm.

DISK DRIVE: Atari 810 disk drive, all leads and in superb condition, extra lead, bargain £35 plus £5 postage if not collected (Liverpool). Also Maths Tutorial, worth £15, sell for £7 (disk and tape). Phone John on 051 523 9966. No offers please.

XE SYSTEM: 130XE plus XC12 datacorder, joystick and 40+ games, £100; 1029 printer with 1029 screen dump disk, Smallfont, Page6 Writer, £50; XF551 disk drive with Atari Writer, DOS 2,5, MyDOS 4.5, SpartaDos 2X and 1X, Transdisk IV, The Freezer, £50; Yorky 256k 800XL/130XE expansion box, cost new £80, unused, will take £50. Phone Steve on 0622 757338. Cash only.

THE COMPLETE SYSTEM: 130XE (as new), 800XL (excellent condition), 1050 disk drive fitted with US Doubler/SpartaDos upgrade, 1010 cassette fitted with high speed turbo loader, Xetec printer interface, joysticks and paddles. AtariWriter Plus, Printshop and Icon disks, SpartaDos Construction Set (3.2) and other productivity software. many games disks, cassettes and original ROMs including Star Raiders, Missile Command, Pole Position and other classics. Lots of PD and new blank disks and disk boxes containing all you need from word processing, printer utilities, operating systems etc. Comprehensive magazine collection including Analog, Antic, Compute!, Atari User and full set of PAGE 6. Lots of printed supporting program documentation. Books inc. Mapping The Atari and Your Atari Computer. You will not find a more complete system in excellent condition at the price. Can deliver within reasonable distance. £200 o.v.n.o. Lots of Atari ST original software also available. Write or call Ken Jagger, 32 Croft House Way, Morley, Leeds. Tel. 0532 524982

VARIOUS: ICD Printer Interface for 8-bit Atari, £15; Atari 800XL and tape deck fitted with Rambit loader, plus software, offers; Atari 800 and 810 disk drive, offers. Tel. 0384 379575

VARIOUS: 800XL, 1050 disk drive with Happy (Lazer) enhancement, touch tablet and Atari Artist cartridge, all power supplies, leads, books, dust covers, £150; 130XE, 1050 disk drive with Happy (Lazer) enhancement and original chips, 1029 printer, Mini Office II, all power supplies, leads, books, dust covers, box of 50 disks, £250; 1010 tape deck, needs 2 keys, 410 tape deck, £5 each; Books - Assembly Language Programming, The Basic Handbook, East Programming, The Atari XL Handbook, Mapping The Atari, £15 the lot; Magazines - Analog, Antic (a handful of each), PAGE 6, Atari User, New Atari User with disks from issues 32 to 61. Software - 300 disks assorted games, PD, utilities, amateur radio, typed-in listings from magazines, from 25p each. Also Assembler Editor cartridge, £5; Amber screen 14" Hi Res monitor for XL XE with lead, video input/output only, no sound fitted, ideal word processing etc., £40; Matsui 14" colour TV, 8 channels, £80. Phone 081 303 5345 any time or write to J.R. Frampton, 91, John Newton Court, Welling, Kent DA16 2AG

XE SYSTEM: 130XE, 1050 disk drive, 1010 tape deck, leads and manuals, software on disk, cartridge and cassette includes Superscript, Visicalc, AtariWriter 2, Flight Sim II, Solo Flight, F-15, Silent Butler and many more, £95 o.v.n.o. would prefer not to split. Tel. Rod Munday on 0869 47570 any time

COMPLETE SYSTEM: Atari 130XE, 1050 disk drive with US Doubler fitted, further standard 1050, XC12 data recorder, Epson LX800 printer, all leads, original boxes, manuals, power packs, listing paper etc. Arcade joystick, many programs on disk/cassette include The Freezer, Transdisk, Mini Office II plus assorted PAGE 6, Atari User, utilities, many games including Beach Head, Beta Lyrae, Leaderboard, F-15 Strike Eagle, Eidolon etc. etc. Almost the full set of Atari User and PAGE 6 from Issue 16. The lot for £285!! Phone Dave Richardson on 0922 51258 after 6.30pm. Can deliver in West Midlands area

XE SYSTEM: 130XE, 1050, XC12, 1027, software disks, tapes, books, MidiMaster II complete, DigiDrum II, Moviemaker, Video Title Shop, Turbo Basic and Compiler, Transpack. Offers are invited for the above. Phone Syd on 0293 511708 (Sussex)

XL SYSTEM: 800XL, 1050 disk drive, XC12 Data Recorder, games on disks and tapes, PAGE 6 magazines and Issue disks, 2 joysticks, £140; also available, Seikosha GP100A printer and Centronics interface, £80; or £200 for the lot. Please ring Colin on Chester (0244) 881079. Buyer collects or pays postage.

VARIOUS: Atari User magazines continuous from first original to current issue. Offers?; 800XL (suffers slight ghosting), 1010 cassette deck, all leads, PSU's, £40 or offers, tapes available if required; 1029 printer with 6 ribbons, £75 or offers; Impersonator cartridge, unused, £15 (half Gralin price); Atari style Infra-Red joysticks, not working, £10 or offers; ROM cartridges - Orc Attack, Tennis, Pole Position, sell/swap; Amstrad CTM 64 colour monitor, use with ST with Stack lead or similar, £90 or offers. Contact D. Edwards on 051 924 4788

COMPUTERS: Atari 400 and 800 (both 16k) plus one PSU and a 410. All working, £45. Buyer collects or pays postage. Contact Paul Stait, 2 Cheriton Avenue, Ramsgate, Kent. Tel. 0843 584685 evenings

TARITALK: Data transfer package with cable and software, £9 plus carriage. Also original 8-BIT software on tape, disk and ROM - write for list to: Paul, 17 Spring Road, Clifton, Shefford, Bedfordshire, SG17 5RE

XE SYSTEM: 130XE, 1050 with write protect switch, touch tablet and drawing software, 3 joysticks, WALTERS 2000 printer and Centronics interface, 303 disk games (11 boxed), 50 utilities inc. Mini Office II, Page Designer, Print Shop/s disks. 30 blank disks, 50 Atari User etc. PAGE 6 and demo disks. Many manuals, SpartaDos etc. correct adaptors, all boxed, £150. Contact Robin at 66 Broadway, Exeter, EX2 9LY

VARIOUS: Hardware, software, magazines, books for sale. Too many to list. Send SAE to E. Cousins, 10 Tower Street, Golspie, Sutherland, Scotland KW10 6SB

PRINTER: Panasonic KX-P1081 9-pin dot matrix printer. Epson compatible, requires suitable interface if used with XL/XE. Complete with original box, instruction manual, spare ribbon and dust cover. £85 plus carriage. Write to Paul, 17 Spring Road, Clifton, Shefford, Bedfordshire, SG17 5RE

EXCESS HARDWARE: 1 Meg XE, £80; 256k XL, £50; 1050 with Happy and US Doubler, £80; 100 PD disks, £50. Send SAE for list of software (disk, ROM, cassettes). M.G. Rice, 29, Copse Road, Plymouth, Devon PL7 3PZ. Tel. 0752 344650

XE SYSTEM: 130XE, 1050 disk drive, 1027 printer, XC12 tape deck plus software, disks inc. AtariWriter. Books. Also MidiMaster and DigiDrum. All very good condition, £200 plus carriage. Contact Syd on 0293 511708 (Crawley, Sussex)

XL SYSTEM: 800XL, 1050 disk drive, loads of games (disk and ROM) plus serious/business software plus loads of books, £160. May split. Phone (Sunbury) 0932 780767

WANTED

BOOK: Your Atari Computer, a Guide to Atari 400/800 personal computers published by Osborne/ McGraw Hill. Good price paid. Phone 0229 54466 or write J. Barnes, 6 Cross-a-Moor, Ulverston, Cumbria LA12 0RT

R-TIME 8: Clock cartridge wanted urgently. I know there are some out there somewhere! Tel. Chris Davis on 0933 624912

SARGON 3 CHESS: Copy of this program urgently needed. Will buy or swap games - disk only. Eddie Cousins, 10 Tower Street, Golspie, Sutherland, Scotland KW10 6SB

MAPPING THE ATARI: XL/XE edition of this book wanted. Tell me your price. write to Fred Meijer, Nachtegaalstraat 29, 2922VL Krimpen ad Ijssel, The Netherlands

RADIO SOFTWARE: Can anyone let me have a disk copy of the HAMTEXT R.T.T.Y./CW program that will save the message and holding buffers to disk? Also a copy of the First Book of Machine Language by Richard Mansfield. Please ring Harry on 0787 473136

PRINTER SHARER: Printer sharer switch box to connect two computers to one printer. Two parallel inputs with one parallel output to printer. Write with price and particulars to: Chas Smith, 93 Preachers Lane, Oxford OX1 1RT

850 INTERFACE MANUAL: Handbook/manual or photocopy of 850 Interface unit, also details of the cable connections between the 15 pin D connector and the 36 pin Centronics connector or printer cable for the parallel interface. Please contact Barnes, 6, Cross-a-Moor, Ulverston, Cumbria, LA12 0RT. Tel. 0229 54466. Any costs willingly reimbursed.

PENPALS/HELP

AMATEUR RADIO: I am starting an Atari Radio User Group for radio amateurs and short wave listeners and would like to know if a similar group exists in the UK already or if there is anyone interested in joining one. Both XL/XE and ST users included. If you are interested please send a SAE for details. G7KCT Graham Rayner, 38 Brockhurst Road, Chesham, Bucks HP5 3JE-

CONTACT is FREE of charge and may be used by any genuine Atari enthusiast for contacting other owners. Any notice may be included except those offering software only for sale or exchange or those offering items for sale commercially. The Editor reserves the right to omit or edit any notice received at his discresion. If space is tight, notices may be shortened and addresses may be omitted with only telephone numbers being published.
Send your CONTACT notice to CONTACT, PAGE 6, P.O. Box 54, Stafford, ST16 1DR. Please write your notice on a separate sheet of paper, not as part of a letter.

FOR SALE ... WANTED ... PEN PALS ... ADVICE ... HELP ...

SOME ATARI OWNERS ARE MISSING OUT

There are still thousands of Atari owners who know nothing about Page 6 and New Atari User. Do them a favour. If you sell your equipment or buy through other magazines such as Micro Mart, or even your local paper, ask them if they read New Atari User. If they don't, give them our address or phone number and tell them just what they are missing. The more readers we have the more support we can give to the Atari Classic. You can still do your bit to help the Atari world and bring more pleasure to new owners

0295 265463, Dave Pettit

THE ACCESSORY SHOP
ISSUE 62

CLEARANCE SALE

IMPORTANT NOTICE

We have been offered, as one consignment, a substantial amount of software for the Atari 8-bit on disk, cassette and ROM cartridge. There are dozens upon dozens of titles many of which we have not featured before. In order that we can purchase this to bring you fresh titles in the coming months we need to clear much of our remaining stock - we need both the space and the finance to secure such a large offer.

So here we have a clearance sale - if you can help us clear our shelves we should be able to bring you a lot of new software in future issues. Virtually all prices have been reduced but we are limited in some cases as our prices are already less than half the normal price. Check out everything, and if there is something missing from your collection, buy it now - you might never see it as cheap again.

MUSIC PAINTER

An exciting educational program that helps to teach music by using colours instead of notes. For children or adults alike

DISK ONLY
Our usual price £7.95
SALE PRICE £4.95

SUPER BREAKOUT

Breakout was the original simple yet totally addictive game and this enhanced version will provide even more addictive fun. Needs paddles.

ROM
Our usual price £3.95
SALE PRICE £2.95

STRANGE ODYSSEY

At the galaxy's rim, there are rewards aplenty to be harvested from a long-dead alien civilization. Fabulous graphic adventure

DISK ONLY
Our usual price £7.95
SALE PRICE £4.95



SPEED HAWK

One of Atari's last games for the 8-bit can now be yours at budget price! A smoothly scrolling arcade game in which you must defend the ring worlds of your solar system from pirates.

CASSETTE ONLY
Originally published at £8.95
Our usual price £2.95
SALE PRICE £1.95

BASIC CARTRIDGE

Some programs, especially some early public domain programs won't run on the XL/XE but they will if you plug in the old version of Basic.

ROM
Our usual price £3.95
SALE PRICE £1.95

PROOFREADER

Users of Atariwriter will be delighted with this, the long lost spelling checker for the Atariwriter cartridge!

DISK ONLY
Our usual price £5.95
SALE PRICE £3.95

PANZER GRENADIERS

In this exciting solitaire wargame you make the decisions for a regiment of the elite armoured infantry attached to the Panzer Grenadiers. The Russian enemy is directed by the computer which will fiercely challenge you with its own complement of infantry, tanks and anti-tank guns. Three levels of difficulty, joystick control, hi-res graphics.

DISK ONLY
Our usual price £9.95
SALE PRICE £6.95

FIELD OF FIRE

From the sands of North Africa and the beaches of Normandy to the bridges of The Roer and the forests of The Ardennes you'll lead Easy Company into the crucial battles of World War II. This fine tactical simulation is historically accurate and requires good planning and execution to recreate or alter history. To heighten the realism and immediacy during play, special attention has been given to the Hi-Res colour graphics and lively sound effects.

DISK ONLY
Our usual price £6.95
SALE PRICE £4.95

GAMES

KENNEDY APPROACH

One of the most unique simulations ever featuring fully authentic speech synthesis as you try to control the flight of aircraft into your choice of five airports. A real life simulation using 3D graphics this will test your concentration, reaction and common sense to the full as you try to cope with slow planes, fast jets and even Concorde in changing weather and with various emergencies.

DISK ONLY

Our usual price £5.95

SALE PRICE £4.95

MISSILE COMMAND

Another of the all-time classic arcade games that has you defending cities from missile attack. For one or two players.

ROM CARTRIDGE

Our usual price £5.95

SALE PRICE £4.95

HARDBALL

American League baseball at its best. A highly regarded game - check out the review in Issue 45 - 'The best sports simulation on the Atari'

ROM CARTRIDGE

Our usual price £7.95

SALE PRICE £5.95

PAC-MAN

Possibly the most well known of all computer games. Still a classic and still in demand

ROM CARTRIDGE

Our usual price £6.95

SALE PRICE £5.95

STAR RAIDERS II

The original Star Raiders updated with better graphics and sound. A great follow up to an all time classic that set new standards

ROM CARTRIDGE

Our usual price £7.95

SALE PRICE £5.95

BLUE MAX

Everyone must have heard of this World War Two 3-D flying game. We no longer have the ROM cartridge but this classic can be yours on disk for a lowly sum

DISK ONLY

OUR PRICE £2.95

SUN STAR

The Sun Star is the fastest and most powerful craft ever built and you must pilot it to recover crystals from the solar grid. A slightly different arcade game.

DISK ONLY

OUR PRICE £2.95

SPINDIZZY

Well known and highly regarded game in which the aim is to explore and map a 3-D world. Excellent graphics and testing puzzles

DISK ONLY

Our usual price £4.95

SALE PRICE £3.95

SMASH HITS 7

Four great games - Colossus Chess 3, Electraglide, Blue Max and Alley Cat. This sold out very quickly last time!

DISK

Our usual price £3.95

SALE PRICE £2.95

ZAXXON

One of the all time classics for the Atari, Zaxxon set new standards with its unique 3 dimensional battlefield and great graphics

DISK ONLY

Our usual price £2.99

SALE PRICE £2.50

KENNY DALGLISH SOCCER MANAGER

The ultimate in football management games. For the first time in a football management simulator stunning top-notch full colour graphics with a fun-packed game design which will leave you breathless with its great features. It has an amazing easy to use icon-drive play system and the exciting gameplay includes: full four division league, detailed graphic highlights, board of directors for detailed performance reports, detailed game strategy, half-time updates, substitutes, injuries, suspensions, full transfer market and lots, lots more!

CASSETTE ONLY *SALE PRICE £1.95*

FIGHT NIGHT

Fight Night brings you all the thrills of the boxing ring as you face the most brutal fighters ever in five separate battles, 1/2 players.

ROM CARTRIDGE

Our usual price £7.95

SALE PRICE £5.95

US FOOTBALL

American Football is now a big craze in this country and you can now play at home. Outsmart the defence, make tackles, select plays and more.

ROM CARTRIDGE

Our usual price £6.95

SALE PRICE £5.95

WAR GAMES
AND OTHERS

NATO COMMANDER

You are commander of Nato and your task is to defend Europe from Soviet invasion. Top class graphics, five scenarios

DISK

Our usual price £5.95

SALE PRICE £3.95

DECISION IN THE DESERT

Take command at the Battle of El Alamein. You can lead either side in this accurate simulation from the creators of F-15 Strike Eagle

DISK OR CASSETTE

Our usual price £7.95

SALE PRICE £4.95

EASTERN FRONT (1941)

The classic war simulation by Chris Crawford that astounded Atari users when released. Based on Operation Barbarossa on the border of Russia.

ROM CARTRIDGE

Our usual price £6.95

SALE PRICE £4.95

CAVERNS OF MARS

Winner of one of the first Atari programming competitions, this was one of the first vertical scrollers and remains much sought after

DISK ONLY

Our usual price £4.95

SALE PRICE £3.95

TAIL OF BETA LYRAE

Our A-Z of Atari Software series says "The ultimate 'Scramble' clone with superb graphics and music." A great horizontal scroller that sets the standards for others to follow

CASSETTE ONLY

OUR PRICE £0.99p

MR ROBOT
& HIS ROBOT FACTORY

One of the most famous platform games that has you running and jumping over everything in sight. A really classy game

DISK ONLY

Our usual price £1.99

SALE PRICE £1.50

MAXWELL'S DEMON

A simple yet challenging puzzle game which will get you totally addicted. In fact two games in one for double the fun

DISK ONLY

Our usual price £1.99

SALE PRICE £1.50

SERIOUS STUFF

LETTER WIZARD

For those who need a little more sophistication in a word processor, Letter Wizard gives you all of the features you would expect

DISK ONLY

Our usual price £5.95

SALE PRICE £4.95

INVITATION TO PROGRAMMING 2

Entitled Writing Your Own Programs, comprises TWO cassettes and TWO workbooks and does not require Invitation To Programming 1.

CASSETTE ONLY

Our usual price £2.95

SALE PRICE £1.95

ADVENTURES/ROLE PLAYING

THE ETERNAL DAGGER

Many consider the SSI role-playing games to be among the best. This is the follow up to the best-selling Wizard's Crown

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An aerial combat simulation set in Korea with 3D graphics, cockpit instrumentation, different skill levels and much more

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SALE PRICE £4.95

JEWELS OF DARKNESS

Three superb, classic, adventures with full colour graphics. Choose from Colossal Adventure, Adventure Quest or Dungeon Adventure as you take on the challenge of the mythical worlds created by Level 9. The Premier collection nicely packaged with a 64 page book

DISK OR CASSETTE

SALE PRICE £4.95

LANCELOT

Level 9 recreate the time of wizards and the Knights of the Round Table in a three part adventure spanning the complete saga of the quest for the Holy Grail. Superbly researched and superbly written this text adventure is full of atmosphere and highly recommended.

DISK OR CASSETTE

SALE PRICE £4.95

SEVERAL OTHER ITEMS AVAILABLE FROM TIME TO TIME - PLEASE ENQUIRE

CASSETTE BARGAINS FROM PAGE 6!

New cassettes from only 95p each including postage!

Enhance your collection with these brand new game cassettes available now from the PAGE 6 Accessory Shop

TRANSMUTER

A new kind of weapon. This sci-fi arcade game features excellent smooth scrolling, incredible terrain, vector graphics sections and subterranean caverns. Fast reactions and a cool nerve are a necessity. Music by David Whittaker

PROTECTOR

Assigned to Fort Rucker, the US Army Helicopter Training School based in the Nevada desert, your aim is to become the best chopper pilot this side of the Iron curtain. A real Protector! Your mission consists of a strategic battle of wits between yourself and either another pilot or a computer controlled RPV

REVENGE II

The Mutated 90 foot high, laser spitting death camels have rebelled against their captors the Zzyaxians and are out for revenge! All action, highly graphical shoot-em-up from Jeff Minter

KIKSTART

The ultimate off-road motorbike scramble simulator. Guide your rider carefully over the obstacles in this all action simulator for 1 player against the computer or 2 players against each other as well as the clock

ROGUE

You are the ROGUE. Your mission is to search the Dungeons of Doom for the Amulet of Yendor. In the dungeons you will find many things to aid the quest for the Amulet. You will also encounter fearsome monsters and fiendish traps that will challenge all your skills

DESPATCH RIDER

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180

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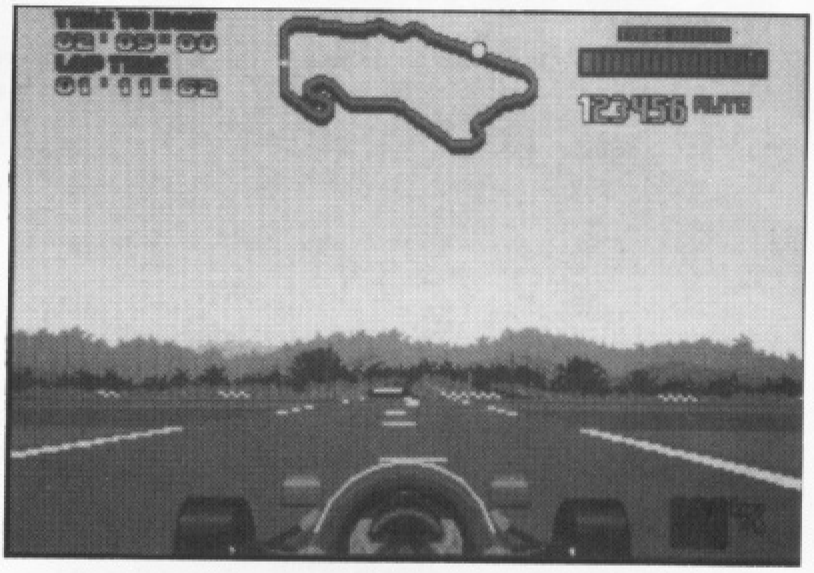
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NIGEL MANSELL'S WORLD CHAMPIONSHIP

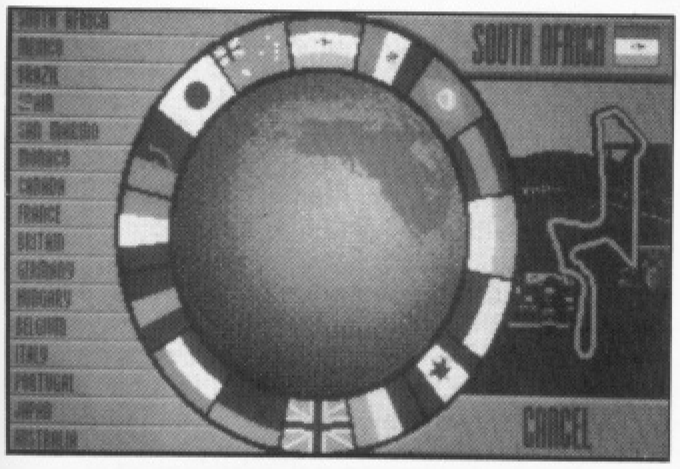


This software is presented in a colourful box with a picture of the racing moustache holding his championship cup aloft. The rear of the box is artistically daubed with screen shots that proclaim this to be "just another Formula One racing Game". So common is this genre becoming it is earning its own abbreviation - F1, I add this only to save later confusion, since the first time I came across the label I thought it was some form of new diet plan!

The game comes on the one solitary disk with a pretty coloured manual, poster and the almost illegible wheel. The wheel is there as a copy protection device, carefully printed in illegible dark grey on deep black. While appreciating this precaution is to stop photocopiers dead in their tracks it also makes legitimate users lives most annoying.

Once into the game the disk whirrs busily and some attractive, not too stereotypical, music appears. The graphics whilst waiting are fairly encouraging and the player does indeed start to warm to the task ahead. Once the game has loaded and the protection been deciphered the first object of the game becomes apparent. It was worrying when reading the manual to see the reliance placed on the use of the new Freewheel Joystick but it becomes apparent this is probably not a game requirement but a marketing ploy. True enough the software allows other control methods, but the player is led to believe the new hardware makes the game so much more worthwhile. I did not have this piece of equipment and therefore cannot offer a comment but it did seem though that the use of the item was unnecessarily complicated.

I selected standard joystick mode and found the game compliant enough. The start presents several icons with choices to be made. I suggest the Improve with Mansell option since it allows a solid practice with a dotted racing line to be followed for security. The only problem here is that Mansell will make dreadfully smug comments about the awfulness of the players driving ability. Still, having endured this, I went onto the track. I decided to change aerofoil and tyre mixtures and remembered to change the default name so that I could instantly recognise my pit information then, engine revving, I was ready for the fray. The actual sounds were not too bad at all, although to my uneducated ear I was not too sure if the sounds were as advertised actual digital recreations of a Renault engine or just a very loud Honda 250. I accept this was just my own problem since I am not one of those people who listens to racing cars most intimate noises. Nevertheless the sound was strong and blood pounding so once the starter allowed I was raring to go.



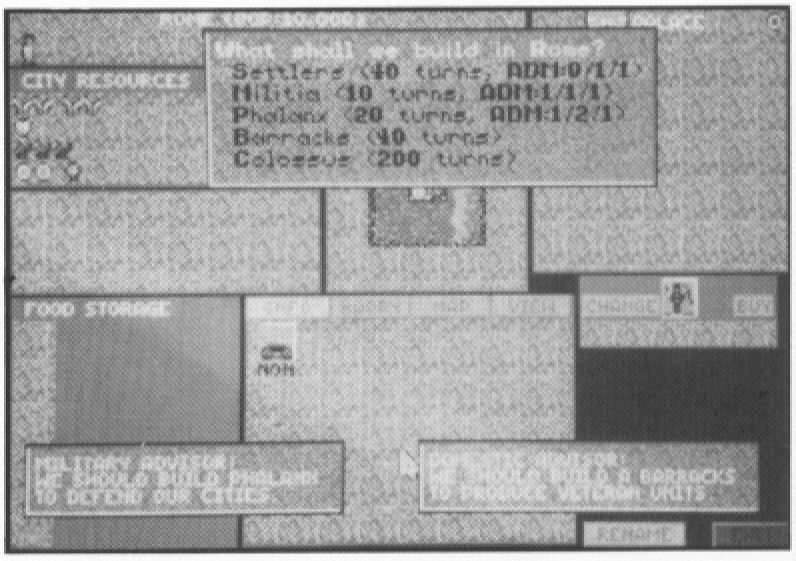
Title:	NIGEL MANSELL'S WORLD CHAMPIONSHIP
Publisher:	**Gremlin**
Price:	**£25.99**
Reviewer:	**Damon Howarth**

The game handled very well. There seemed to be no overt problems and the car reacted to my joystick's every command. I visited the pits for another excellent piece of animation and even managed to finish the course. The scenery was different enough to know that the courses were changing through the season and there was even a bit of weather to contend with, but the thrill seemed to wear off after several dozen laps. I accept that the Williams that is used as a model is well done, even having a visual display that seems to emulate those seen on Murray Walkers chats. The game has everything the F1 freak could want and yet there seemed to be a little something missing, the game lacked a certain charisma. Certainly it has a strong claim to being one of the best ST F1 games about but it manages to miss on glitz too much. Maybe that is why it was named after Mr. Mansell?

Overall I felt that this was a game that had been produced to sell a particular joystick. The fact it ascends the heights to become a pretty good game and a strong contender for ST race game of the month feels almost coincidental. There do not seem to be many (if any) better F1 race games about for this machine. Try it, but I suspect it may well come as a joystick bundle in the not too distant future.

- ***GAMEPLAY*** *- Well, surprisingly playable really, don't believe the wheel is all though*
- ***SIGHT & SOUND*** *- Again very strong the game performs well under pressure*
- ***OVERALL*** *- I liked this game despite myself - take a look, it has some promise*

CIVILIZATI



Civilization has finally found it's way on to the ST! I have been playing this game on the PC for many moons now never getting far but enjoying it enormously. This is the game that took Railroad Tycoon off the top spot and it still lurks in the top ten of every machine it has been released for.

Loosely (very loosely according to some aficionados) the game has it's roots in Civilisation the trading board game. Having played both I think the connection is loose, and indeed the methods of obtaining your goals are very different. The object of the game is to bring your people from nomadic wagon folk to space age travellers and found a new space colony. If that is not to your taste then you can beat the opposition into the ground and win a military victory.

To explain the complexity of this game would take several thousand words, indeed so complex are it's basics that there are already two books available on the subject. Before my enthusiasm for this game becomes too unbounded let's look at the hardware needed.

EATING MEMORY!

Sadly this game needs at least a 1040 machine, it would ideally have something bigger. It comes on four double sided disks, not bad for the information in it, but it does mean certain sections need a great deal of disk swapping which slows everything down and makes for some frustrations. This is especially true of the graphic sequences which, although not altogether necessary, make for a great deal of atmosphere. If you are lucky enough to have a hard drive make sure you install it there. If you are not so lucky then the two floppy disk option is very necessary and if you have loads of memory a ram disk will take the installation. (I do not recommend the Ram Disk option to any with less than 4meg on board though).

The graphics are good and although they do not need to be as striking as some high tech shoot 'em ups, they do offer great deal of feel and some subtle clues.

The animation and playing speed are fair but again this is a thinking game and, somewhat like chess programs, does not need flash speedy movements.

First advice to any player is to read the manual very thoroughly. Although the teaching mode is good there is nothing better than knowing what is available and how the game should be played. The mouse is necessary and makes many commands more usable. Once the game has been played a few times it may seem advisable to turn off as many of the palace building graphics and civilopedia options as comfortable. This does away with many tedious disk swaps.

Now on to the game .....

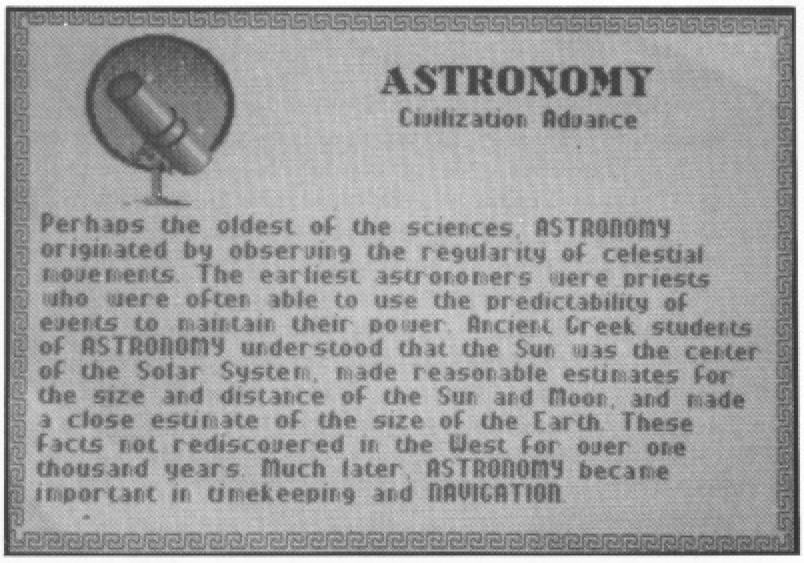
A RUN THROUGH

As with the Railroad tycoon review the easiest way to explain the game is to run through a few turns. At the outset the machine will ask if you want the pre-made, almost historical, Earth or if you want one created from scratch. Once your land has been created then select a difficulty level, number of computer opponents and, finally, the race you wish to be. There are a huge number of possible races and my advice is not to pick Britain until you have some experience in the game.

For my example I shall suggest that the choice be Chieftain level (basic) with the maximum seven opponents, playing as the Egyptians. Since I do not feel sexist today I shall play as Cleopatra (even though the software calls me King Cleopatra!!). The first view I receive of my kingdom is a covered wagon on the background of sand with many undisclosed squares about me. My first choice is either to move the wagon or to found a city. If there appears to be sea somewhere near I shall move near that and as long as the surrounding terrain is not too barren will set up my first city. I will notice as I move that hidden squares disclose themselves as I go near and the map of the world grows a little. Once the city is built, I accept the name offered and I am then offered a choice of things to build in this city. The advisors exhort me to either buy soldiers or granaries. I start to build a militia man and wait until he is built or I have enough people to grow larger. As the population expands so does my ability to build. Indeed I may even have the location to start civilising my people. I am asked what advance we wish to study, I will choose Bronze Working so that later troops can defend themselves better. I thought about Alphabet to enable other advances later but came down on the side of domestic defence.

ION

From the dawn of man to the conquest of space



Eventually I am of sufficient population and armies to send out a scouting party and maybe start to create further settlers to build more cities. All will be well until I meet other nations or barbarians. I can trade with some nations and in this game the first audience is with Queen Elizabeth I. She wishes to swap advances with me. I happily trade my Bronze working for England's knowledge of map making (sailing effect). If I have developed writing by now then I may be able to use the diplomats I can build to set up embassies and/or steal information from them. I might also feel these upstart English are muscling in on my territory so if my technology allows I may even start a war with them.

Meanwhile deep in my empire my first city having grown large has completed it's aqueduct and I decide to build a Wonder of the World. Since it appears the Chinese have built pyramids I go for the Colossus in the hope trade will increase, thereby improving income, lessening taxation and enabling study time to be enhanced. It is becoming apparent now that I have many decisions to make all the time. I even have to decide which is the best government at any time. Monarchy is good for expansionism and early on but later it helps to be a republic or democracy in order to maximise income and invention. I can't declare war as a republic/democracy though as my people may also become unhappy and revolt. All these things need to be juggled. Financial stability versus expansion and invention, trade versus war, enlightened government or harsh totalitarianism. The choices all need making on a regular basis. There are no correct decisions each depends on any given situation. Do you use your settlers to make new cities and thereby encourage growth and prosperity or are they better employed tilling the land to provide more food or making roads for better travel? Subsequently pollution rears it's head with factories and nuclear weapons, the ozone layer may fracture and then there is the space race as things become more frantic.

SCRATCHING THE SURFACE

This is a game with so many levels even an in depth review such as this cannot hope to but scratch the surface. I could probably rant on about this game for a long time to come and I look forward to seeing comments and questions in New Atari User because the game on other machines has provoked excited comment and hints galore. This is a game thast needs talking about and thinking about. I believe that the end result even makes the swapping of floppies worthwhile. Do not be dispirited if you keep dying, it is possible to reach the end of the game alive albeit as an underdeveloped under threat nation.
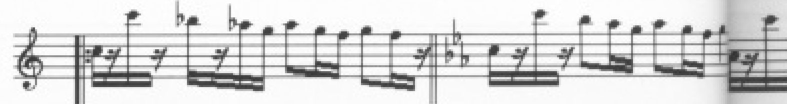
Hints? Well build as many cities as you comfortably can, and keep the population up. Make sure you have diplomatic relations with as many nations as you can find and keep a strong defence force. If you have the production capability having the Great library and the pyramids is more than a little useful.

In conclusion this is a game that is well worth getting to know. It is certainly worth finding some storage method that does not rely on floppies and the game presents a challenge to anyone at all sorts of levels. This has to be one of those games that would appear on desert island computer disks. I can't recommend highly enough - except for those damn floppy swaps.

- ***GAMEPLAY*** - *Thought provoking and smooth except for the floppy routine*
- ***SIGHT & SOUND*** - *I found both atmospheric and useful, turn off excess graphics to save on floppies*
- ***OVERALL*** - *Get it now, if necessary get the hard drive or Ram upgrade to go with it*

CIVILIZATION
Microprose
£34.99
Reviewed by Damon Howarth

MAKING MUSIC WITH YOUR ATARI



Most music created on an ST is limited to three or four tracks but there are greater possibilities. Here John S Davison sets out on an ambitious project to produce a 21 part arrangement to be accompanied by a full printed score

One of the most challenging computer based music projects I've been involved in to date is now nearing completion. As it relied heavily on the use of Atari ST's I thought it would make a good subject for this column, so here's the story of ..... The Albatross.

My good friend Derek West is a professional musician, and until recently he worked as a bandmaster in the RAF. His circle of friends includes the composer Greta Wilens, who wrote a march called The Albatross especially for the Air Force bands. Greta has a large number of published musical works to her credit, but for some reason her publishers weren't interested in The Albatross. She dearly wanted to see it in print, so Derek and I decided to tackle it ourselves. After all, we both owned Atari ST's so already had some of the tools needed for the job.

SOFTWARE RULES!

BUT - hardware is only half the story. A computer is only as good as its software, and for this job the software had some pretty exacting requirements to fulfil. Basically, we needed a desktop publishing system for music, capable of handling all the symbols found in standard music notation.

It had to be able to print a complete musical arrangement, including the conductor's score showing all 21 instrumental parts spread down each page, plus 21 individual parts - one for each instrumentalist. As the individual parts are musically identical to those in the conductor's score we wanted to input the score only and then have the software extract and print each part automatically.

To check for transcription accuracy we also needed to hear the music played from the score after we'd entered it. This required the capability of MIDI playback using synthesisers to simulate the band instruments. Then, when everything sounded OK, we wanted the software to produce high quality output on dot matrix printers, as we didn't want the expense of having to buy a laser printer.

After looking at virtually everything on the market we concluded there was really only one software product that came anywhere near our requirements - C-Lab's Notator, a combined sequencer and score printing package. I described its features in detail in Issues 54/55, so won't cover them again - in this article we're more concerned with how it coped with a real live situation.

Getting familiar with something as complex as Notator isn't a trivial task, and we spent many evenings just trying out different features to see what they did. Despite reading the huge manual it still took much trial and error before we really understood how certain features worked. I started a notebook to record practical hints - every time we did something new I briefly jotted down how we did it for future reference. It proved much easier to consult my notes than to wrestle with the manual again later.

The hardest part to sort out was the printing. None of Notator's supplied printer drivers seemed to exactly match the Star, Panasonic, and IBM dot matrix printers Derek and I normally use. Printer "driver" is the right word - we drove our printers crazy trying to find one with the right characteristics. Eventually, by modifying an existing driver using Notator's printer adaptation editor, we produced something that gave quite good results.

SOURCE MATERIAL

Obviously, when publishing music you need source material to start from. Greta originally composed Albatross at her grand piano, and recorded the finished piece directly to audio cassette. There was no written music at this point, so the recording had to be transcribed onto paper then specially arranged for performance by the RAF wind bands. This extremely skilled task was handled by George Geddes, another of Derek's musician friends. His handwritten band arrangement became our source material for input to Notator.

This raises an important point. You need PERMISSION to publish music - not only from its original composer, but also from the arranger of the version you're working with, as both aspects are subject to copyright. In this case both Greta and George were only too happy to give their consent to what we were doing.

We planned to use one of Notator's sequencer tracks for each instrumental part. Notator usually works with 16 tracks at

once - one for each MIDI channel - but it does have a special mode allowing you to couple together two sets of 16 tracks, necessary here to fit our 21 tracks in. We then had to get the handwritten musical notes off the page and into their appropriate tracks in the computer. Notator gives you a choice of input methods, which basically boil down to playing the stuff in from a MIDI instrument (such as a keyboard) in real time using the sequencer, or inputting it in step time using one of the available graphical editors. Both Derek and I are primarily wind instrument players and aren't very good at sight reading input via a keyboard. So, in the absence of a suitable "gob-synth" (MIDI wind instrument, if you hadn't guessed) we had to make do with Notator's score editor to input the notes manually, a seriously tedious task.

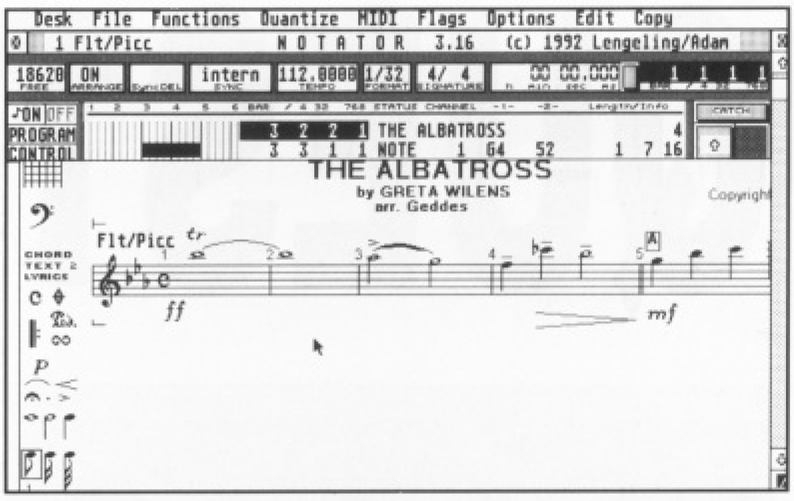
BARE BONES

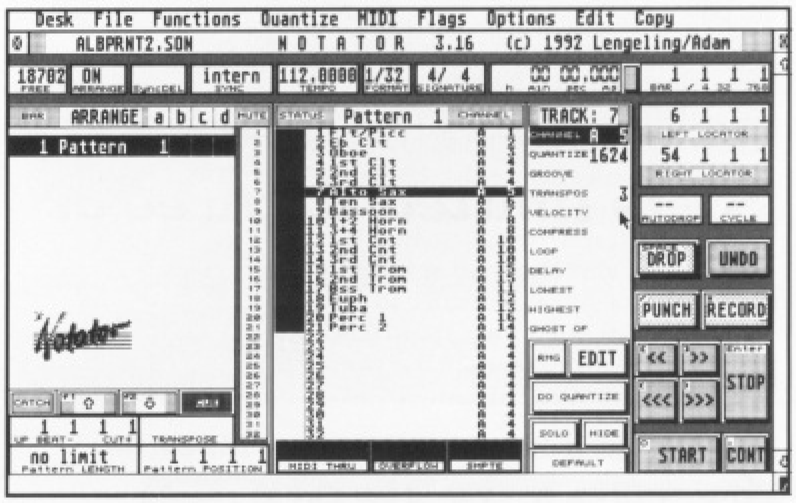
Our strategy was to build up the score one instrument at a time, so we began with the flute part and worked our way through that to the end. At this stage we only wanted to get the bare bones of the music in, so the only symbols needed were correct clef, time signature, key signature, bar lines, and the notes themselves. We deliberately ignored the performance markings such as phrase marks and dynamics and left these for later. Virtually all this is achieved via mouse input, with symbols selected by simple click and drag operations. Even so, at the end of each session the poor old mouse must have been feeling pretty weary after the miles it travelled over my desk!

Having entered the flute part we then played it back via MIDI using my Yamaha YS-200 synthesiser, set to a nice flute patch. Listening while following the handwritten notation it was fairly easy to spot any gross transcription errors, which could then be quickly corrected using Notator's score editor. When the part looked and sounded OK, we went on to the next instrument, the Eb clarinet part. This was treated in exactly the same way, except that after checking it out as a solo instrument we also played it back along with the flute part to check the two worked OK together. Over the next several weeks we used the same approach with all of the other parts, gradually building up the full wind band sound. Using the YS-200's multi-timbral facilities we were able to assign each sequencer track to a separate MIDI channel and give each channel a different instrumental sound.

We soon hit a small snag. The YS-200 can only play a maximum of eight notes at a time, so we ran out of notes after entering eight parts. The solution - connect up another synthesiser. Derek also has a YS-200, so we daisy chained this onto my YS-200 and continued the process. We hit the same problem again with 16 parts entered of course, so needed to add a third synth. We'd also run out of YS-200's now, so I had to connect in my trusty old Yamaha PSS-680 which gave us a further 12 notes of polyphony, more than enough to complete the job.

But now we hit a potentially more serious problem. MIDI has only 16 channels, so how on earth could we play back 21 different instrumental parts? The panic was soon over when we remembered that several parts are actually played on the same type of instrument - for instance there are three separate Bb clarinet parts, and these could all be allocated to the same channel. By sharing MIDI channels for similar sounds like this it was possible to stay within the 16 channel limit. If we really had needed 21 totally different sounds and hence 21 channels then C-Lab could have supplied a solution in the form of their "Export" add-on for Notator. This is a piece of hardware which allows you to access FOUR sets of 16 MIDI channels, with each channel individually addressable from within Notator.





AURAL v VISUAL

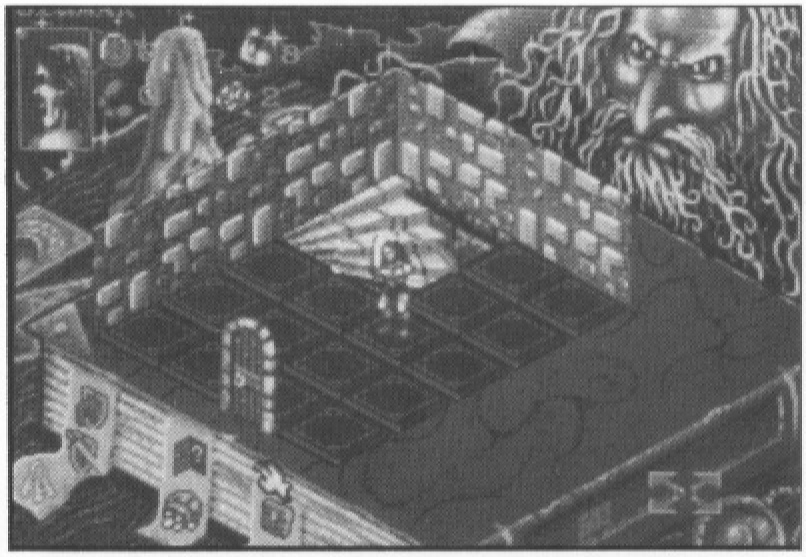
Percussion parts were the last to be entered, and this created another problem. None of our synths had a snare drum roll sound which could be easily triggered via MIDI. They only had single hits, so we had to create rolls the hard way! Every hit in a roll had to be individually written onto the score, making the roll appear as a long sequence of demisemiquavers. It sounded realistic when played via MIDI, but gave the wrong visual appearance to the score as drum rolls aren't normally written like this.

Another conflict between aural and visual aspects was that the score contains "repeat" sections, typically with the second time through having a different ending from the first. These differences are written as "first time" and "second time" bars, placed consecutively in the score. Notator doesn't recognise repeat bars or the first/second time differences and just plays straight through both exactly as written. It doesn't interpret the notation as a real musician would. For correct playback we copied the repeats out in full, again compromising the visual aspect of the music.

To get round both the above problems we decided to produce TWO versions of Albatross, a "performance" version for accurate playback via MIDI and a "printing" version from which we'd eventually create our sheet music. Managing two sets of files made life more difficult, but under the circumstances it was the best we could do. We continued editing the two versions until convinced all the notes were correct, and then we were ready to start the fun and games involved in producing the first draft printouts. But the story of how we got on will have to wait until the next issue.

QUEST OR CRU

A long time ago in an industry far far away the concept of the board game was conceived. The inventors, having seen the joys of computers, felt something had to be done to wrest the populace from in front of the screen and back to relating to other people with healthy aggressive tendencies. The firm Games Workshop had been working with role playing games for many years and even had several of their own brand of games for sale. To manage their dream though they approached Milton Bradley, toy makers to the world, and licensed two of their ideas.



Do you wanna be a Hero?

ENTER THE HERO

The games that came forth both had similar rule systems but with differing backgrounds. In the beginning was Hero Quest, a sort of Dungeons and Dragons game with pretty little models to move around, on a make it up as you go board. The main point to this game was that it served as an easy introduction to a somewhat cerebral and slightly surreal world of fantasy gaming. Because the figures moved by a dice roll around a board, and because the enemy were visible and worked to a rule book of adventures, they became successful. It was a game I played as a demo in more than one Games Workshop in Britain. Fast, easy to play, and with enough continuity to allow for long term identification with the character, an excellent concept.

Lo, the powers that be realised that this was too good to waste on board gamers and thus they translated the whole to the pixel perfect screen of the micro chip. No more messing with figures that had to be painted and no need for a referee to read the plot and run the game. Dice rolling and book keeping became the computer's role which would maintain interest in the screen and chip. Fortunately one elf sneaked in and made a provision for this to become a multi player game. The company looked in astonishment - a multi player Role Playing Game with a point to it. The plot worked and thus Hero Quest came to a computer near you.

The game is very strong, it has excellent atmospherics and a fairly strong music and effects background. The software takes care of all the things which would slow progress down and the graphics, while certainly not of the quality present in a real 3D plastic or lead figure, are most striking. The whole event is menu driven with the options to create 1 to 4 characters of set abilities. There is a set campaign to go through, indeed there are even whispers of converting further scenarios to the machines (the PC has in fact a bonus add-on scene included so these extensions are around).

The play is simple yet effective. Each character throws a dice and can proceed up to that many squares. Along the way they may search for goodies, traps, doors or any other object that takes their fancy. Combat is equally simple with the player largely unable to affect the outcome except for buying better armour and weapons as the game progresses. I really liked this implementation. It is not as deep as Dungeon Master type games and it presents only one problem an episode but it is fun and it does present the option for up to four people to run a character, (or for one to control all four but this can become cumbersome). I enjoyed it with just one character making his way through the travails of life to the final world saving quest.

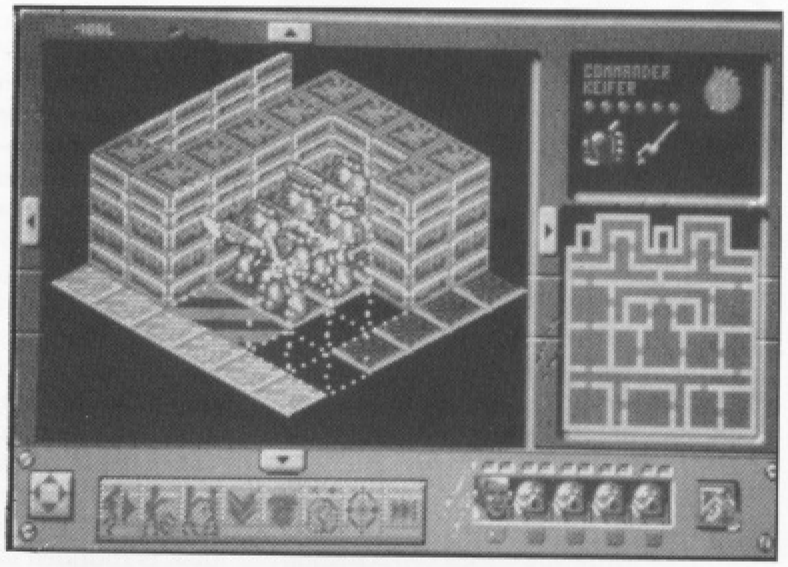
BLAST OFF

Owing to the success this had as a board game the same combination of Milton Bradley and Games Workshop worked on Space Crusade, a game using the same sort of dice system but with more panache. A sort of Space Dungeons and Dragons meets Commander Ripley and her aliens. Again this sticks very much to the original game and gives a strong feeling of cohesive play. This time though only a maximum of three players can take part, each with a squad of hardened Space Marines all trying to destroy the evil on various space craft - meet the space orcs and the large mouthed seeding monsters! Perhaps this lends itself even more to the computer genre since running a marine squad is not unlike the view from Aliens II where Ripley follows individuals around the caves and guides their footsteps to the motherlode. The game has loads of techie stuff like mad robots and heavy laser artillery. Graphically on a par with Hero Quest, it keeps a sense of urgency about the whole proceeding as the transport ship will leave your unit stranded at the Aliens' mercies after certain time limits.

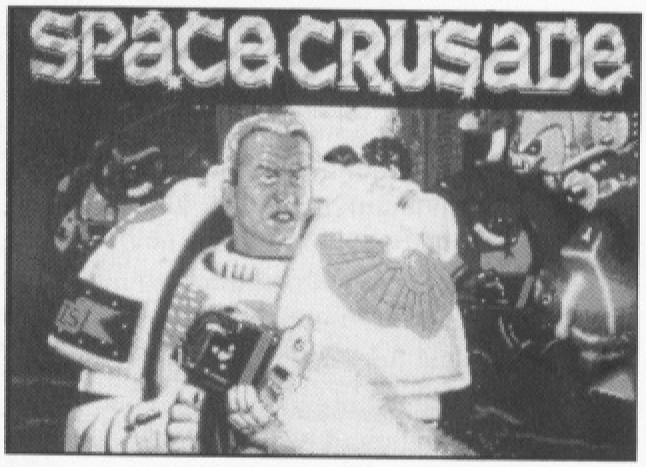
The success of the mission is measured in varying ways. Keeping the squad alive is a major aid to good scores and long term survival. Making sure at least the

SADE?

Damon Howarth, a fantasy game player ever since being found in a woodland clearing by a passing troll, checks out how well board games translate to computer



or would you rather be a Crusader?



primary and if possible secondary mission goals are reached is sure to help the end result. If the scores are good enough at the end of any given mission then the commander will receive awards and commission points. Obviously the player proceeds up the ladder of success from Sergeant to Admiral. The tack-on scenario in the Voyage Beyond software takes the Space Crusaders past their initial adventures on to greater and braver glories.

The sound effects are good and sci-fi like, the opening music pleasingly dramatic. The game itself seemed to be more complicated to get to grips with than Hero Quest and as such presented more of a problem in winning. Certainly this game has opened the route to future adventures and I know that this game has definitely caught the gamers imagination more than Hero Quest. Many supplements for it emanate from Games Workshop. As a space role play it does not tax the thought powers but as a wargame with special blasters and other jolly special effects it has a lot going for it.

I make no apologies for reviewing these two games in the same article, both use a similar playing engine and have equally high quality graphics and ease of play. Both provide an unprecedented ease of multi player use and both have an interesting knack of ensuring that players are both supportive team mates and rivals. The downside seems to be in the game saving requirements for both, they need specially formatted floppies and can only store limited sessions on each disk. This is not too great a disadvantage as any player would probably only need his last one or two games saved at any one time.

The software makes a great hit by duplicating the board game in its entirety without making too many computer concessions for ease of programming. Such adaptations as are made are board game enhancements rather than disenchanting limitations.

Hero Quest represents excellent value for money if only because it is half the price of the board game. The only downside to these is that, unlike the board games, there are no options to create your own adventures or even paint the figures in a most personal way.

As a long time Fantasy Role Player I would put both these products on a par with the rather good solo dungeons invented for an old game called Tunnels and Trolls. Wonderful stuff when your are on your own or noone can be bothered to Game Referee (or D.M.). I liked both but my personal favourite was Hero Quest.

- **GAMEPLAY** - *Very straight forward, initial setup takes a little thought, then fine*
- **SIGHT & SOUND** - *Loud, atmospheric and good, both games use the sound to enhance rather than to hide problems*
- **OVERALL** - *Excellent games I have enjoyed playing these - investigate immediately*

HEROQUEST & SPACE CRUSADER

Publisher Gremlin

Prices: £10. 99p (Hero)
£25. 99p (Space)

PD Paul Rixon's WORLD

There's little doubt that programming has never been as popular among ST users as it has among 8-bit enthusiasts. Whenever you switch on an Atari 8-bit you're greeted by a familiar flashing 'Ready' prompt that almost invites you to write a Basic program. When you boot up an Atari ST you're faced with the GEM desktop's disk drive icons that seem to insist you should run someone else's program. Furthermore, ST programming isn't heavily publicised by the 'glossy' ST magazines. Owing to the lack of a standard language, most are unwilling to publish program listings and tutorials for fear they will appeal only to a minority of readers. No wonder that many users view programming the ST as a mysterious activity that only the incredibly clever and dedicated 'techy' types are able to indulge in. Of course, the truth is that anyone can have a go - and fortunately, without a great deal of expense. Just take a look in the public domain!

BASIC BEGINNINGS

Most people are introduced to programming through some form of Basic. Atari's own ST Basic has always been regarded as something to avoid and this has enabled other company's commercial products to capture an appreciable chunk of the market. GFA Basic is among the most popular dialects and has the advantage of being widely supported by public domain authors. There are several **GFA BASIC HELP** disks in the Page 6 library. They contain a mixture of textual hints, code examples and documented programs. The first disk includes seven tips on subjects ranging from how to tell if your printer is connected to writing multi-tasking applications. There are also demos of animated graphics and a conversion program for porting CAD 3D II files into GFA-Object. If you're familiar with GFA Basic you'll more than likely know what to do with this! The second help disk focuses on the subject of dialog boxes and features a system called Diox. All you do is follow the instructions to visually place and edit the various dialog box buttons and choose their respective 'properties'. Diox then generates the actual source code to implement the desired interface. The third volume in the series carries four more 'tip' files on subjects such as how to create a TTP (Tos Takes Parameters) file and how to cope with desktop accessories. There are several example programs, ready to run. The disk is rounded off with an interesting manual making system, enabling the creation of double sided A5 manuals from plain ASCII text files. Elsewhere, **SAMPLE GFA BASIC PROGRAMS 1** is an excellent source of programming hints and also a good advertisement for GFA Basic. Among the contents are a fractal drawing program, a bouncing 3D cube demo, a drawing system and a Battleships style game. Also supplied is a run-only version of GFA-Basic so you don't need the full compiler to sample the delights. You might decide to buy it later!

MORE MODULA

The Modula 2 language is based on the more widely known Pascal and, due to its relative simplicity and clarity of code, is often used to teach programming technique on university courses. Students who are lucky enough to own an ST could therefore benefit greatly from the ST **SHAREWARE MODULA 2** development system from ANA systems. The two disks contain mainly ARCed files which can be easily exploded to obtain the complete toolkit - a Modula 2/68 compiler, linker, libraries and development shell. The libraries and shell have all been written using the supplied compiler. The minimum hardware requirements are a 520ST with two disk drives or a 1040ST. Obviously a hard disk is ideal! The compiler uses about 300K to compile a medium sized program, so 520ST users many find that the Development Shell is a bit restricting. The compiler and linker can also be run from a suitable command line environment. A version of the famous MicroEmacs text editor can be found on the disk though you are invited to use a preferred substitute. Incidentally, the latest release of MicroEmacs, **MICROEMACS 3.10** is available separately from the library. With this one you also get a comprehensive manual, tutorial and help files. Unless you are already |çflu also get a comprehensive manual, tutorial and help files. Unless you are already familiar with Modula 2 you will need access to a suitable reference guide since the disk documentation doesn't go any further than explaining the installation notes and other technical matters. You can obtain help on menu items in the program by holding down the ALT key while you click on the appropriate item. For a small sum you can register with California-based ANA Systems and thereby receive the full set of documentation.

C THIS

C is very much the 'in' language in the microcomputer world just now and has always been the first choice for serious ST programmers. C was written to support the development of the UNIX operating system in the early 1970s and has since been developed to run on a variety of hardware platforms, from the Sinclair Spectrum to the largest mainframes. C combines the convenient elements of high level languages with the speed and efficiency of assembler. There are several dialects in the public domain and as with all language applications you are expected to have some pre-acquired knowledge, or at least a decent reference manual. In the case of C there is a great quantity of literature to choose from and while some books are extortionately priced, others - such as 'Learning to program in C' in the Babani range are easily affordable. Obviously if you plan to get deeply involved in the Atari-specific aspects of C programming you will need a relevant source of information, such as the Compute technical reference guides. To begin with, any C book should suffice!

SOBOZON C is widely regarded as the

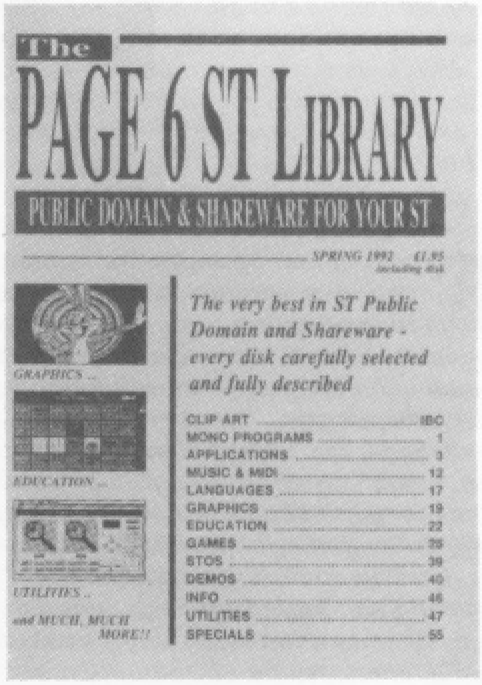
best among public domain C compilers and has been highly acclaimed in several ST magazines. The most recent version - **SOBOZON C 1.33i** (though not an 'official' release) - is known as the 'heat and serve' edition since it's accompanied by a friendly installation utility that creates directories and sets everything up without requiring fiddly customisation. The files are initially compacted so you need to have some formatted disks handy before you run the install program. The Sozobon C Compiler is a complete implementation of the C language as defined by Kernighan & Ritchie. The system incorporates a compiler, optimizer, assembler and linker, as well as other associated utilities. Version 1.2 of the public domain dLibs runtime library is included and for GEM support, version 1.5 of the public domain GemFast library is supplied. There is also a relatively generous helping of documentation. The compiler was written, like so many PD programs, because the author wanted something better than the buggy commercial product he was using. The Sobozon compiler is therefore loosely based on the original commercial program (Alcyon) but apparently runs faster and generates better code than its predecessor. Source code and executable files for all components of the Sozobon compiler can be freely distributed, since it's classified as a freeware product. In fact, the authors encourage you to make lots of copies and give them away!

C HERE FOR HELP

To help you get accustomed to C techniques there are currently no fewer than four sample code disks available. The first disk - **SAMPLE C PROGRAMS** - is a good starting point since the programs here are not too complex. Executable, source code and documentation files are included as appropriate for a variety of demos and utilities. They include Fractal graphics, multiple file printing and even a C compiler! In the second collection there are useful 'make' utilities to aid program development and also a terminal package. Disk three offers more than it seems since everything is compacted to save space. There are dozens of example C routines and intriguing stuff such as the source code to the archive utility itself, a disk formatter and a TINY picture handler. If you have some knowledge of C but are stuck on a particular aspect of ST coding, this disk could well answer many of your questions. Finally, many people have played HACK on mainframe computers but now you can see the source code on your ST, thanks to the fourth disk of sample C. You'll find a virus detection utility here, too.

EXPLORING FURTHER

Out of space already! So far we've looked at some of the 'mainstream' programming languages available for the ST. However, these are by no means the only ones on offer in the public domain. A surprisingly large array of specialised languages exist and exploring their nature and uses can be quite an adventure.



It is rather difficult to illustrate programming languages so here, instead, is a picture of our catalogue which has all these disks and more. Yours for £1.95 but you'll get a refund voucher

The next PD World column will continue with the languages theme but examine some of these lesser known titles. There may also be a chance to delve into some alternative operating systems. This is all getting a bit technical! Games addicts may rest assured that there will be the usual entertainment round-up in the subsequent issue. See you then.

HOW TO GET THEM

The disks featured in PD World can be obtained from the PAGE 6 ST library. When referring to a specific disk please use the unique reference code for identification. A printed catalogue describing all the library disks in detail is available from PAGE 6 at a cost of £1.95, refundable against the first few disks ordered. This includes a copy of THE PAGE 6 CATALOG DISK which is otherwise priced at £1. The disks featured this issue are:

ST26 - SAMPLE C PROGRAMS
ST44 - SAMPLE GFA BASIC PROGRAMS 1
ST83 - SAMPLE C PROGRAMS 2
ST85 - GFA BASIC HELP 1
ST86 - GFA BASIC HELP 2
ST123 - SAMPLE C CODE 3
ST144 - GFA BASIC HELP 3
ST173 - SHAREWARE MODULA 2 (DISK 1)
ST174 - SHAREWARE MODULA 2 (DISK 2)
ST180 - MICROEMACS 3.10
ST218 - SAMPLE C CODE 4
ST705 - SOBOZON C 1.33i

Prices for standard disks are £2.95 each or £2.50 each for five or more but prices are lower for members of the PAGE 6 ST Club
Write to PAGE 6, P.O. Box 54, Stafford, ST16 1DR
Telephone 0785 213928 with credit card orders

AIR WARRIOR - Part 2 LIVE COMBAT!

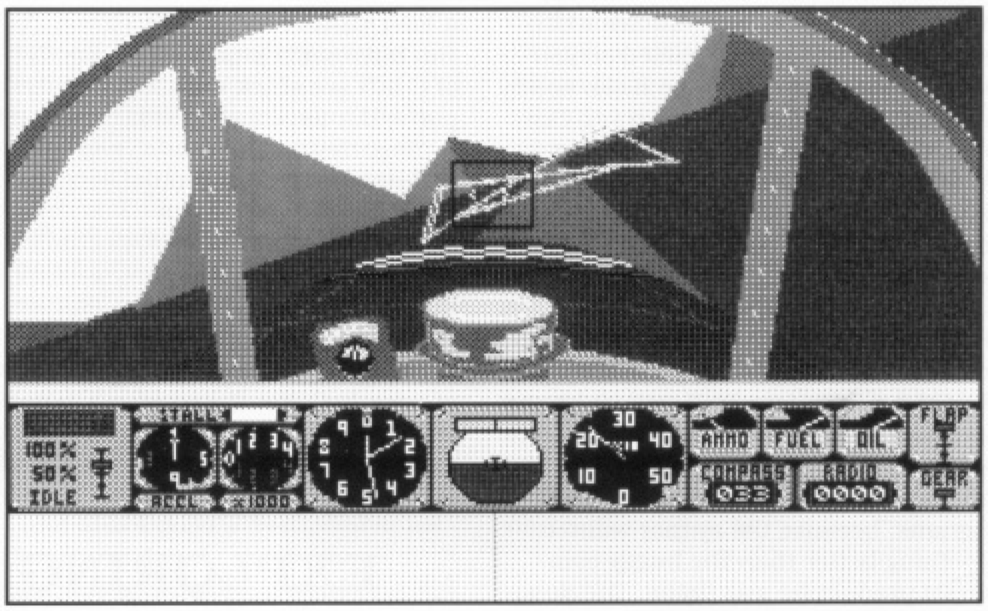
First I must apologise for not getting this second part of the Air Warrior article out in time for the last issue. Fate decreed that a combination of circumstances would swallow up the time I'd scheduled for producing it (no, I WASN'T in jail!). Anyway, better late than never, so here goes.

The first part of the article reviewed the Air Warrior package. This, if you remember, is an air combat simulator which can run as a simple flight simulator on your ST, or as a full multi-player combat simulator via the use of On-Line Entertainment's mainframe computer. You can dial into this service using a 1200 or 2400 bps modem via the normal public phone system. We're now going to look at the multi-player aspect of Air Warrior and see how it works in practice.

Air Warrior doesn't have a fixed combat scenario, as the action depends on what the players decide they want to do. They inhabit a simulated world, which consists of two main parts. Firstly there's the text based "conference rooms" part which you occupy when not actually in combat. Here you can chat to other players to decide strategy, plan missions, etc. Then there's the graphical simulation part where the real combat action occurs.

THREE THEATRES

Where does the combat aspect come from - who are your opponents? Well, the simulated world is divided into three different operational theatres, known as European, Pacific, and World War 1 and each involves three adjacent countries called (with stunning originality) A, B, and C. You elect to belong to one of these countries, and battle against players from the other two. The different theatres are provided to give variety in scenery and types of aircraft available to fly.



The Air Warrior package contains a large colour poster of Spitfires in flight, and on the back there's a map of the European theatre showing the three countries and their major features. As well as geographical features such as mountains, sea/lakes, and rivers it also shows items of strategic interest such as airfields, fuel dumps, factories, and so on. These can be bombed, but may be restored to operational status by dispatching rebuilding supplies to them via truck convoy and cargo plane. These trucks and planes then become legitimate targets too, of course!

Each country has several airfields, from which it operates a motley collection of ancient British, American, Japanese, German, and Russian planes. The countries can't afford expensive modern warplanes (the manual says), and get their aircraft as cheaply as possible from wherever they can. It's just an excuse to supply an interesting collection of aircraft for you to fly, of course!

Your job is to fly any available aircraft and inflict maximum damage on the enemy with it, by shooting down his aircraft, bombing his strategic installations, destroying his resupply convoys, and generally giving him hell. He, of course, will be trying to do exactly the same to you! You can operate alone, as a member of an organised squadron, or even fly as a crew member (e.g. as a gunner) in aircraft piloted by someone else. You can also operate on the ground, defending or attacking targets using a jeep, tank, or "Flakpanzer" anti-aircraft vehicle. If the air is thick with enemy planes you might just stand a better chance of success with one of these!

TRAINING AREA

Before going into combat you'll probably want to do some training in Air Warrior's training area, where you can practice the skills required. Here you can fight a real opponent without risk of getting killed. There are also a number of robot planes flying around, so you can get some easy target practice in - but beware, as they sometimes shoot back! You can get tuition here too - training sessions are often run by expert pilots, who can show you what to do. Then when ready, you can venture out into the real combat area.

After declaring your allegiance to one of the three countries you can proceed to the conference room located in that country's Headquarters. Here you'll meet your compatriots, form squadrons of up to sixteen players, and plan group missions. If you want to talk to pilots at other airfields or in flight you can use the radio. By tuning it to the required frequency you can converse with other people using that frequency.

Next move is to the Briefing Room at one of the airfields. Pilots and crews can meet here for last minute discussions immediately before entering their chosen aircraft and setting off on a mission. Also, if you want to join a bomber crew as a gunner you can do it here. Certain aircraft can also carry "observers", and you can request to fly in the observer's seat on someone else's mission. In fact, many people can observe from a single aircraft, so this is a great way for an expert to demonstrate combat techniques to beginners.

GOING ONLINE

OK, so what's the multi-player version like to use? First thing you do is to establish contact with On-Line's computer. With your modem connected and Air Warrior software loaded (and configured" for 1200 or 2400 bps and 8-N-1) you dial the access number at 081-539-6763. After a few rings the system answers, you get a greeting message, and you're IN!

After logging in you're presented with a menu giving you access to different areas of On-Line's system, including news, information, electronic mail, general forum, the games area itself, and an area for paying money into your account. The last named is very important, as without cash credited you can't do much - logging on and paying cash into your account is about it! When you buy the Air Warrior package it includes £30 worth of online time, and this gets credited to your account when you send in the registration card. However, you can only spend this on Air Warrior time, you're still barred from On-Line's other facilities until you've parted with real cash. When using the system your account is debited at £1.76 per hour, and when it runs dry you can top it up again online via your credit card. You can also opt to pay a fixed charge of £9.99 per month for unlimited use of the system - a bargain if you get addicted!

Your phone charges are on top of this of course, so it can get quite expensive - especially if you're calling long distance. Via BT the long distance off-peak call cost is around £4.68 per hour, or about £2.78 per hour if like me you subscribe to Mercury's domestic service. Warning - call only during off-peak cheap rate periods, unless you want to bankrupt yourself! You can also access the system via the "DialPlus" low cost data communication service. Call On-Line's voiceline on 081-558-6114 for more details if you're interested.

On-Line were very slow at crediting my account with the initial £30, but from then on things went reasonably smoothly - except the training. I tried on several occasions to enter Air Warrior's training area, but the system kept telling me it was temporarily unavailable. So, it was in at the deep end - into combat without training! I went to an airfield, selected a Focke Wulfe 190, and entered the "fly" command. At this point the program switched into graphics mode and began to behave just as it did when running as a stand-alone flight simulator without the comms link to On-Line.

You soon become aware of other players though. Radio chatter between aircraft gets displayed onscreen so you can "hear" what other pilots are saying to each other. You can join in too by typing messages on the ST's keyboard. If you switch into radar mode you can see what other aircraft are around and find how many are enemies. You can then take off, steer a course to intercept them, and the real fun can begin!

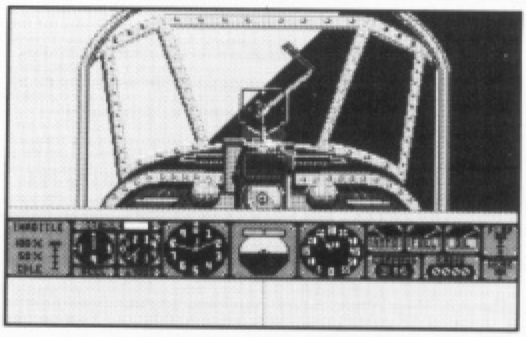
BANDITS AHEAD!

First visual contact with other players is a rash of tiny black dots in the distance, but the system soon begins to help by displaying icons to help you visually track and identify them, telling you the aircraft types, country allegiance, and supplies range information. As you get closer the dots grow in size and eventually become recognisable aircraft shapes. Keeping them in view can become difficult, as if they're enemies they've probably seen you coming and will try to get on your tail. Expect to get bounced fairly quickly!

If you play at being a lone wolf don't expect to survive for long in your early encounters! There are no fancy missiles or fire control systems to help you here - it's air gunnery and dogfighting skills that count! Those enemy fighter jocks all seem to know what they're doing, and it's not long before you hear the crack and whine of their bullets around you (great sampled sound effects here!) and an explosion indicating you've had it. If you're quick you can bail out, otherwise you're dead. If you want to fly alone go after some truck convoys or a cargo plane, but watch for protecting air cover. A better plan is to team up with someone with experience from your own country and fly with them until you've learned how to stay alive.

The online multi-player version of Air Warrior is really a very complex wargame. The further into it you get, the more involved it becomes. I've merely scratched the surface of its capabilities here, you need to read the manuals supplied to fully understand its potential, and try it for yourself to appreciate its qualities. I must admit I was surprised at how addictive and exciting I found it, and the graphical and other shortcomings mentioned in part one of this article just didn't seem to matter. Once again it's gameplay that counts, and this is enhanced enormously by one thing missing from most other computer games - the human element. Here you're interacting with real live people who display humour, unpredictability, cunning, and other human traits in a way no computerised opponent can.

The only problem is those phone charges - unless you live within local call distance of the On-Line computer your next phone bill could give you a heart attack. If you can trust yourself to ration your online time to affordable levels then give it a try. You'll find the experience a very enjoyable one.



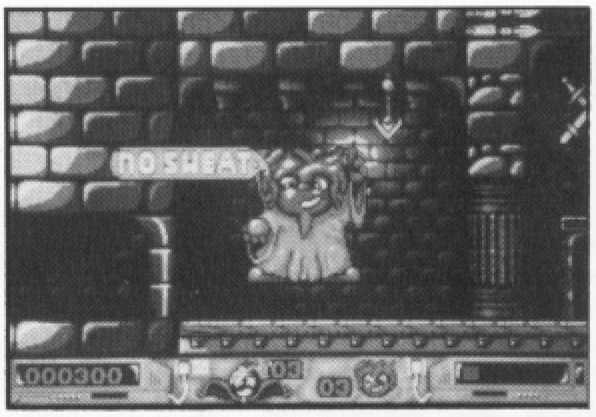
AIR WARRIOR

On-Line Entertainment

Price: £34.95

Reviewed by John S Davison

VIDEO KID



I remember this game from several issues back when it was released at full price with a free game of Kid Gloves in its box. The game has not changed at all, but no longer does Kid Gloves appear with it. The interesting aspect pf this re-release is whether software publishers actually read reviews, my concluding thought when I first reviewed this being that it should have been a budget game from the outset.

The plot is still the same, not surprisingly. The character you play has been dragged into a world of video films and needs to escape by completing several levels floating around and generally shooting things that get in his way.

The controls are more compliant in this version. I remember that originally our hero used to float around more or less at his own whim but this time he seemed more stable. The graphics and sound are still strong and the Kid still as fiendishly cute (a la Dennis The Menace). The game is still the same and presents some entertaining problems and some fast joystick action. The sound track is pleasant but unmemorable, the setting is colourful and the pixels cartoon like.

This is not a game that is going set anybody's joysticks aflame or make monitors suffer terminal burn in, but on the other hand it is pleasant and more interesting than many similar products. Technically I cannot fault the game, even more so now it has reached a sensible price. Indeed the game presented as it is now looks as good as any games console platform opus and at much less cost.

If you like your games cutesy and your action fairly laid back it is worth trying this at the new cut down price. I did not find it particularly addictive and the whole seemed a bit samey but overall the effects are reasonable.

Personally I would not buy this if only for the lack of originality of gameplay but if you are new to the ST or have not many platform games then this would find space in a collection. The game does show off the ST's abilities somewhat but not originally enough to be exciting.

FACTS

Title:	VIDEO KID
Publisher:	Gremlin (GBH GOLD)
Price:	£9.99
Reviewer:	Damon Howarth

SIGHT & SOUND

As expected, acceptable and apt

GAMEPLAY

Acceptable and smooth, control is reasonable

VERDICT

A somewhat better than average budget platform game, better than many but there are far more exciting ones about

THE ULTIMATE VIRUS KILLER v. 5.7

reviewed by Les Ellingham

Ever since the first virus appeared on the ST there have been various programs to ensure that you can check your disks for infection. Many have been public domain, a few have been commercial offerings, but only one has been continually updated to reach the position where it is, without doubt, the only virus killer you should by for your ST.

The Ultimate Virus Killer started life as a public domain program and was one of the best but then the author Richard Karsmakers caught the bug (excuse the pun!) and began to develop the program into just what its title says - the ultimate virus killer. The full story of the development of this program is in a massive text file on the disk and makes most interesting reading.

Most ST users must know what a virus killer does, it kills viruses, and it seems hardly necessary to explain its function in a review. UVK certainly does that but it also does a lot more, including immunising your disks against further attack and repairing numerous boot sectors which may have been damaged by other programs or by viruses. Perhaps this aspect of the program demonstrates more than any other just how much work has gone into making UVK the most comprehensive program of its kind for it can repair no less than 653 different bootsectors. That means the author has incorporated the boot sector code for this many commercial programs just on the off chance that you might need to repair a particular disk.

Sounds impressive doesn't it? But just look at the other statistics and you will be amazed. The current version of UVK can recognise 1,326 bootsectors, 68 bootsector viruses, 5 link viruses, 38 anti-viruses, 119 resident applications and 33 different packer formats. It seems that Richard Karsmakers has tested and included virtually every known piece of ST software so far produced!

Using UVK is a piece of cake. Just insert a disk press F1 (or return) and follow the prompts. The program will tell you if the disk is safe, if it has been immunised or if it has a virus. If it is a commercial program or has a recognised anti-virus, chances are that it will tell you exactly what program it is. If a virus is found then you will be alerted and given the immediate chance to destroy the virus and immunise the disk. Simple. With just a few keypresses for each disk you can test your entire collection in a relatively short time. At the end of a session the program will tell you just how long it has taken and how many different actions were performed.

UVK is now so comprehensive that there is little to complain about. Sure you will find a disk one day that it does not recognise but if you do you can send the boot sector over to Richard Karsmakers and he will include it in the next update, sending those impressive statistics soaring ever higher.

A virus killer has to be recommended as an essential tool for every ST user and, as far as I am concerned, there is no need to look any further than UVK.

All right, just one complaint to finish with. I reviewed the software on Wednesday 5th May but the program insisted that it was actually Monday. Now I know I can trust it to kill viruses but can I really be sure it was telling the truth when it told me I was killing viruses on Michael Palin's birthday?

UVK is distributed by Douglas Communications and is available from a number of vendors at just £9.99

WHERE CAN I FIND? ...

The Atari 8-bit computers are, without question, the finest home computers ever designed and can still hold their own against any home computer. More powerful than any 8-bit and much easier to access than any 16-bit, it is a great pity that software and hardware support is dwindling. You can still find support for your machine, though, and this directory should get you on the right track. It is by no means comprehensive and we would be happy to receive details of any other companies, anywhere in the world that still support Atari.

We cannot guarantee what response you might get if you write to any of these companies, but give it a try, they need your support as much as you need theirs. Stick a couple of International reply coupons in an envelope and, if you don't get a reply, the most you lose is a few bob. But if you do get a response, it could open up a whole new world and add years to the useful life of your Atari. Don't forget to keep us informed if you find good support for your Atari Cassic.

Software Infinity
642 East Waring Avenue
State College, PA 16801
Good PD selection. Have just begun marketing commercial games from overseas

DataQue Software
PO Box 134
Ontario, OH 44862
Turbo-816 16-bit upgrade board, TransKey hardware for using IBM keyboards on the 8-bit, and other hardware

B&C ComputerVisions
2730 Scott Boulevard
Santa Clara, CA 95050
Tel. (408) 986 9960
Huge selection of software and hardware items. Also some new commercial games, unavailable elsewhere

Sagamore Software
2104 Arapahoe Dr
Lafayette, IN 47905
Good PD/shareware selection with extensive documentation

Change In Heat
12 Bella Vista Place
Iowa City, Iowa 52245
Independent programmer has produced 2 excellent commercial quality games for the 8-bit

Bresnik Software
555 Ware Street
Mansfield, MA 02048
Another independent, producing good educational software

UltraBasic
10 East 10th Street
Bloomsburg, PA 17815
8-bit speciality software

NERDS Software
18 Wendy Drive
Farmingville, NY 11738
Printshop related software

IB Computers
9244 S.W. Beaverton-Hills Hwy
Valley Plaza Shopping Center
Beaverton, Oregon 97005
(503)297-8425

BellCom
PO Box 1043
Peterborough, Ontario, Canada K9J7A5
The largest PD/shareware selection

Compsult
PO Box 5160
San Luis Obispo, CA
93403-5160
Closeout items galore

No Frills Software
800 East 23rd Street
Kearney, NE 68847
Closeouts & Printshop graphics

Miles Better Software
219/221 Cannock Road,
Chadsmoor
Cannock, Staffordshire
WS11 2DD
England
Surely known to everybody and, apparently highly regarded in the USA

Bacmun Software
1671 East 16th Street,
Suite 629
Brooklyn, NY 11229
PD theme disks

Alpha Systems
1012 Skyland Drive
Macedonia, OH 44056
Utility software & hardware

American Technavision
15338 Inverness Street
San Leandro, CA 94579
(510) 352 5639
Large selection of commercial software at closeout prices, and hardware replacement parts

Best Electronics
2021 The Alameda, Suite 290
San Jose, CA 95126
(408) 243-6950
Known as *the* Atari hardware store. If they don't have the part you need, nobody does

BRE Software
352 West Bedford Ave,
Suite 104
Fresno, CA 93711
PD/Shareware

C&T ComputerActive
PO Box 893
Clinton, OK 73601

Phantoms Atari 8-bit
Box 331 Levisa Road
MouthCard, KY 41548

Newell Industries
P.O. Box 253
Wylit, TX 75098
Tel. (214) 442 6612

Innovative Concepts
31172 Shawn Drive
Warren, MI 48093
(313) 293-0730
Accessories, hardware, PD software

CSS
PO Box 17660
Rochester NY 14617
(716) 429 5639
Speciality hardware items, 8-bit repair service

San Jose Computers
640 Blossom Hill Road
San Jose, CA 95123
(408) 995 5080
New and reconditioned hardware and software

East Hartford Computer
202 Robert Street
East Hartford, CT 06108
Discontinued software for all computers

Aerion Software
PO Box 1222
Riverdale Station, NY, NY
10471-1222
Markets a new 8-bit commercial game

Toad Computers
556 Baltimore Annapolis Blvd
Severna Park, Maryland
21146
(301) 544-6943
Now offers a selection of software and reconditioned hardware

Gralin International
11 Shillito Road, Poole
Dorset, BH12 2BN
Hardware and software, including ICD products

TWAUG
P.O. Box 8
Wallsend
Tyne & Wear
NE28 6DQ
Regular newsletter with disk available to members and non-members

NOSAUG
S. J. Murray
71 Walker Road
Torry, Aberdeen
AB1 3DL
Scotland
Producer of the excellent disk magazine FUTURA, also available on tape

Micro Discount (Derek Fern)
265 Chester Road
Streetly, West Midlands
(021) 353 5730
Large selection of commercial software, also hardware and replacement parts

Tiger Developments
26 Menziers Avenue
Walmer, Deal
Kent
CT14 7QZ
Commercial 8-bit software

Next, is a list of magazines still supporting the 8-bit Atari.

ATARI CLASSICS
170 Sproul Road/Rt. 352
Frazer
PA 19355-1958
USA
A new bi-monthly magazine formed by a number of dedicated users to keep the 8-bit alive in the States

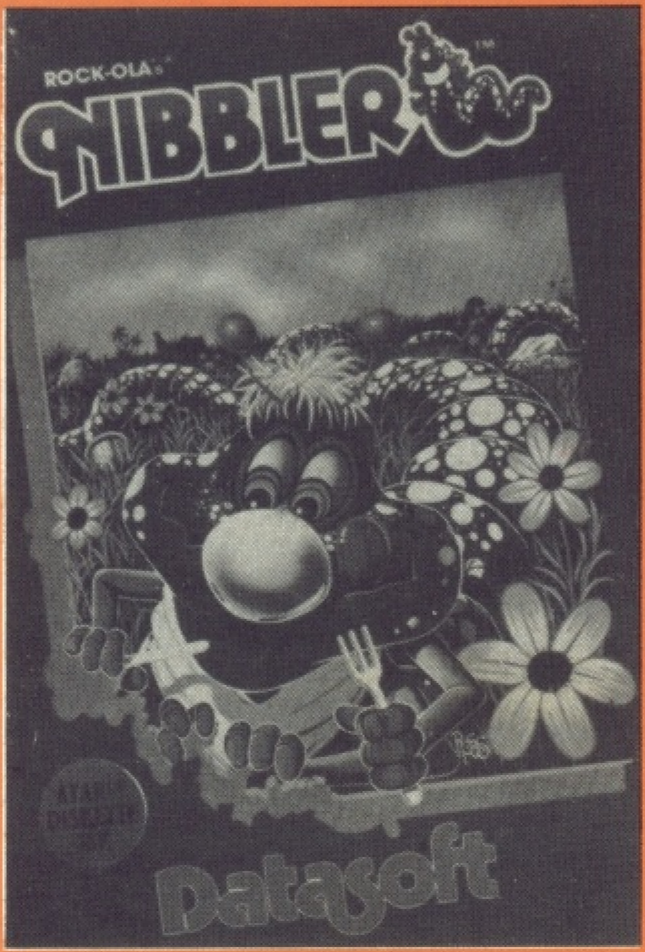
Current Notes
122 North Johnson Road
Sterling, VA 22170
A truly excellent Atari-oriented magazine, supporting both 8-bit and ST

Atari Interface
3487 Braeburn Circle
Ann Arbor, MI 48108
(313) 973-8825
A magazine supporting both 8-bit and ST, with input from Atari User Groups in the US, Canada and the UK. They also produce a monthly 8-bit disk

New Atari User (PAGE 6)
P.O. Box 54
Stafford, ST16 1DR
England
0785 213928
A professionally produced magazine supporting both 8-bit and ST, also large PD library for both machines and commercial software

EXCEL (Robert Stuart)
21 Stronsay Way
Broomlands
Irvine, Strathclyde
KA11 1HZ
Scotland
Disk based magazine and commercial software

This list was originally published by the US disk magazine AIM in July 1991 and updated by Stourbridge User Group whose address you will find included above. Many thanks to them and to all who are still supporting the 8-bit. Long may it continue!
Please keep us informed if you know of any amendments.



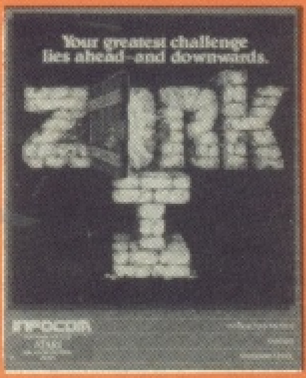
FREE

with orders over £10

*Yes a £9.95 Datasoft game absolutely FREE when you spend over £10 with the Accessory Shop. Check out the offers on this page and on the Accessory Shop pages inside and send or phone your order. If it comes to more than £10 (excluding postage) we'll enclose a copy of this Pacman type game absolutely FREE if you ask for it.**

**NOTE the game is on disk only and will only be sent to those who specifically request a copy with their order*

FULL DETAILS OF THE OFFERS AVAILABLE FROM THE ACCESSORY SHOP AND AN ORDER FORM ARE INCLUDED WITH EVERY ISSUE



ZORK I — DISK ONLY

The Infocom classic and the adventure game that changed the way all future adventures were written. The Great Underground Empire of Zork is well documented by now and thousands of players have become addicts graduating to Infocom's more difficult adventures. Zork I is the ideal introductory level adventure for beginners or those with a little experience. If you have never ventured underground before now is the time to try, it's never been cheaper to expand your universe! Classic original Infocom packaging with excellent manual and a map.

OUR SPECIAL OFFER PRICE £2.95!

LOWEST EVER PRICE ROMS!



KABOOM

Challenge the Mad Bomber as he tries to bomb you out of sight. Can you catch his bombs and dowse them in time? Or would you like to be the Mad Bomber and try to flatten one of your friends? Lots of excitement for one or two players in this addictive arcade game that won awards for Best Audio and Visual Effects when it was first released. Simple yet addictive.

ROM CARTRIDGE

OUR PRICE £2.95



RIVER RAID

This best-selling, all out battle adventure from Activision will have your palms sweating as you fly up river bombing enemy bridges, avoiding lethal choppers and hot air balloons. Can you survive far enough up river to discover its secret? Few can. Now this 1 or 2 player game can be yours at the lowest ever price. Bombs away!

ROM CARTRIDGE

OUT OF STOCK

CHECK OUT THE ACCESSORY SHOP PAGES FOR MANY MORE BARGAINS!

SUPER SPECIALS

MAXWELLS DEMON

Check out the review in Issue 49. Paul Rixon found this simple game to be quite addictive and at this price can you afford not to become addicted! It's a different type of game, more in the Tetris mould than an arcade game. It sure makes you think and the price won't break you if you don't get fully hooked.

DISK ONLY — *Recommended price £9.95*

SUPER SPECIAL JUST £1.99

MR ROBOT & HIS ROBOT FACTORY

One of the most famous of platform games that has you jumping over fire, running over breadmills and bombs, climbing ladders, sliding down poles and more with some great graphics. Master all 22 screens if you can and then create your own for neverending fun. This is what platform games are all about.

DISK ONLY — *Recommended price £9.95 on disk*

SUPER SPECIAL JUST £1.99

ZAXXON

One of the all time classics for the Atari, Zaxxon set new standards when first issued and was copied many times. Pilot your craft across the unique 3 dimensional battlefield shooting enemy fuel tanks, anti-aircraft tanks and missiles before launching off through space for the ultimate conflict with a mighty robot - few have got this far! Zaxxon, often copied, never bettered and NEVER at this incredibly low price!

DISK ONLY — *Recommended price £9.95 on disk*

SUPER SPECIAL JUST £2.99

**ALL ITEMS MAY BE ORDERED WITH THE ORDER FORM ENCLOSED OR BY WRITING TO THE ACCESSORY SHOP, PAGE 6, P.O. BOX 54, STAFFORD, ST16 1DR
CREDIT CARD ORDERS MAY BE TELEPHONED TO 0785 213928**